

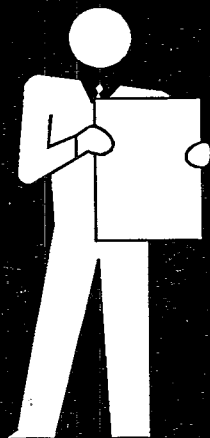
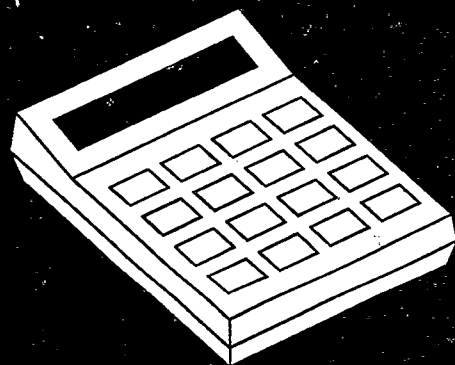


A University of Tennessee
Municipal Technical Advisory Service
workshop

EPA-430-9-91-014

Managing Your Utility's Money

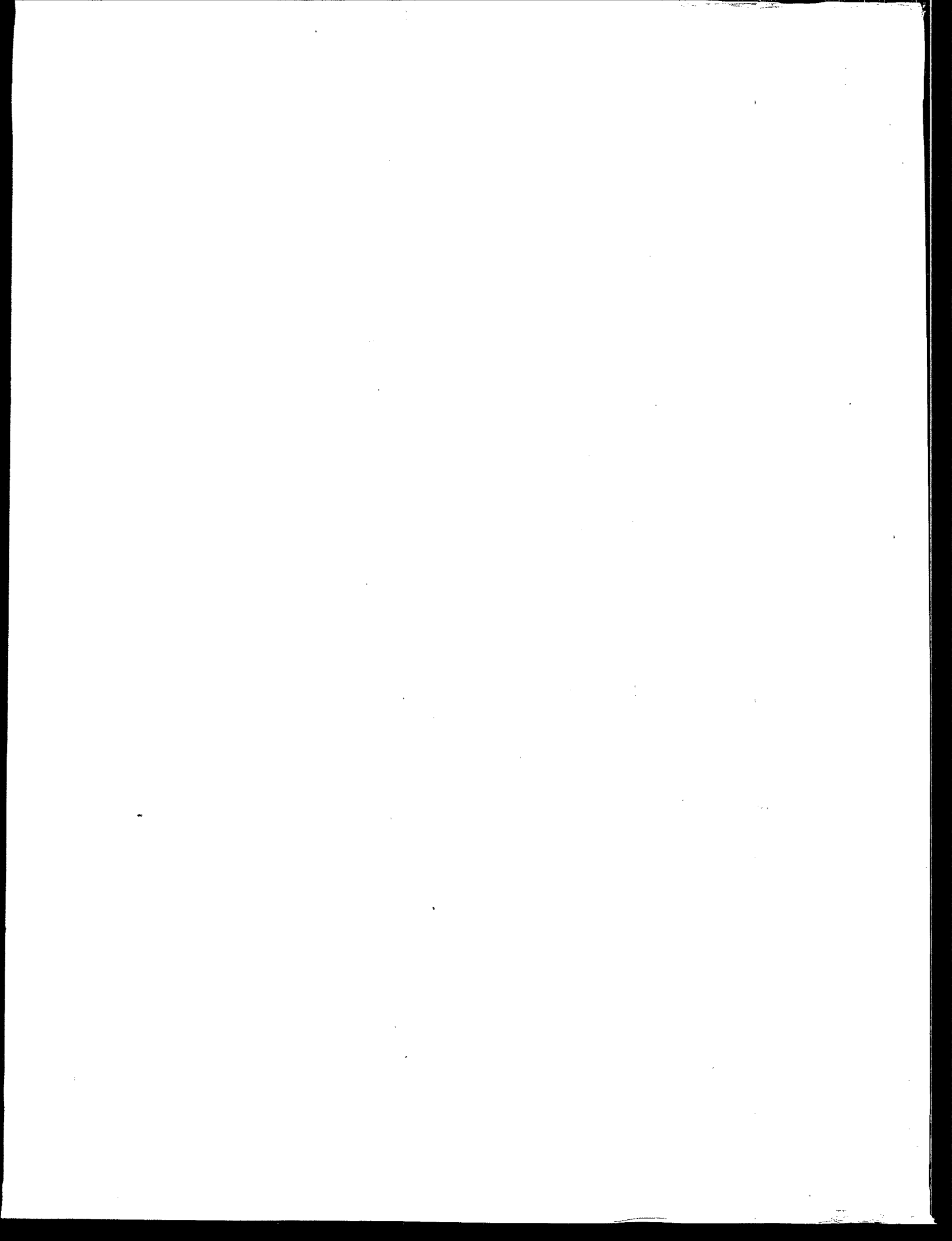
The Trainer's Manual



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EPA
United States
Environmental Protection
Agency

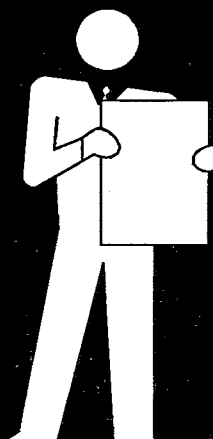
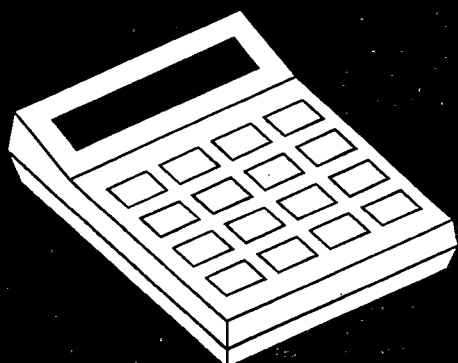




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Managing Your Utility's Money

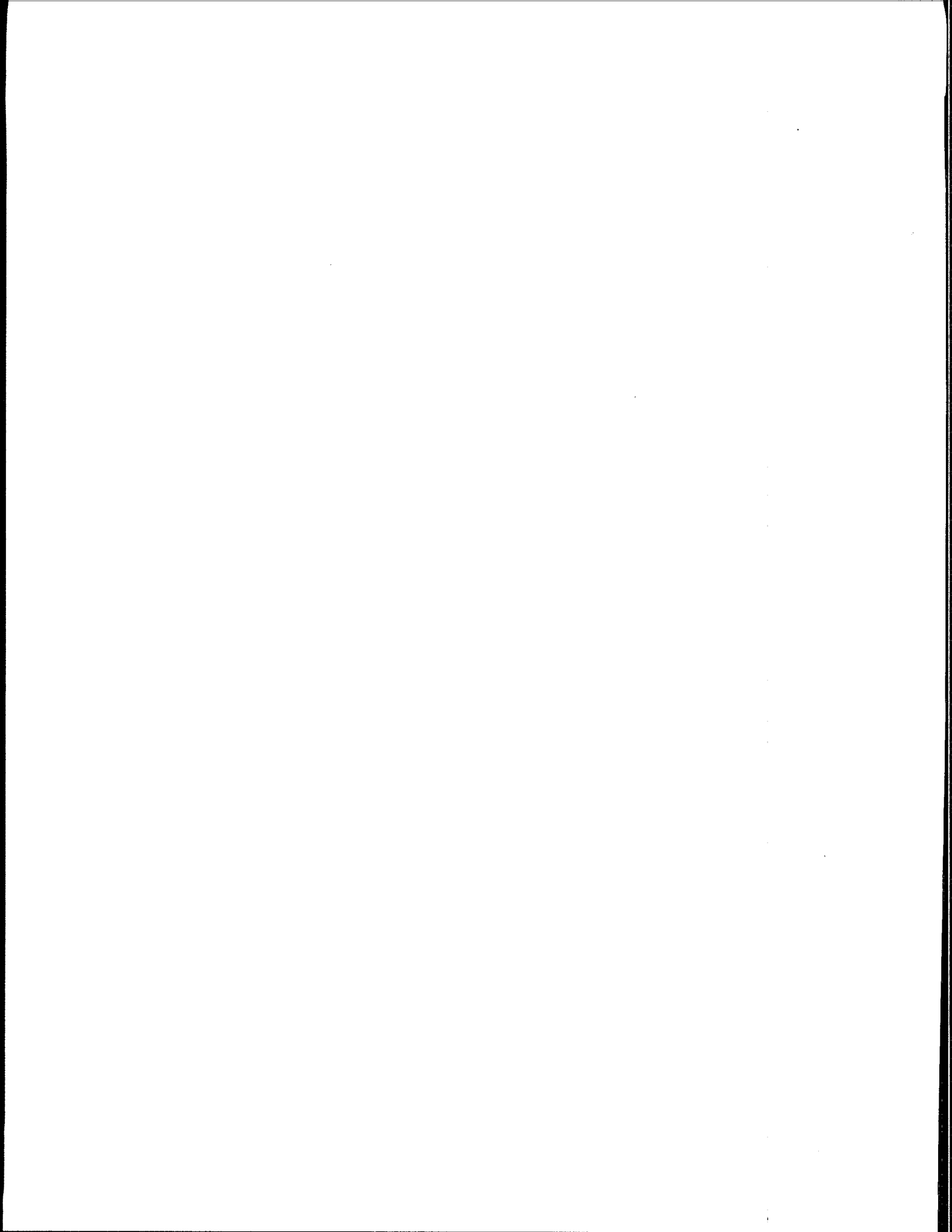
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Agency



ABSTRACT

How can communities protect their multi-billion dollar water and wastewater treatment investments and give citizens clean, safe water? The key lies with municipal officials' ability to acquire sufficient operating revenues.

Sound financial management allows communities to acquire the necessary revenues to maintain financially self-sufficient water and wastewater operations.

The best source of revenue for paying water and wastewater treatment costs is user fees. Unfortunately, raising user fees is one of the most dreaded actions undertaken by local officials. If is not done correctly, the resulting political backlash and public resistance can be harmful for water and wastewater operations.

The purpose of this workshop is present financial management and user fee information for local officials. These seminars provide local officials with information they can understand and use in improving the financial health of water and wastewater treatment operations. The workshop will help participants establish sound financial management practices, assess the financial health of water and wastewater systems and raise revenues through increasing user fees.

ACKNOWLEDGEMENTS

This notebook was prepared by Haig Farmer of the United States Environmental Protection Agency and Sharon Rollins of The University of Tennessee Municipal Technical Advisory Service. This notebook is available as EPA Office of Water publication number EPA 430/09-91-014.

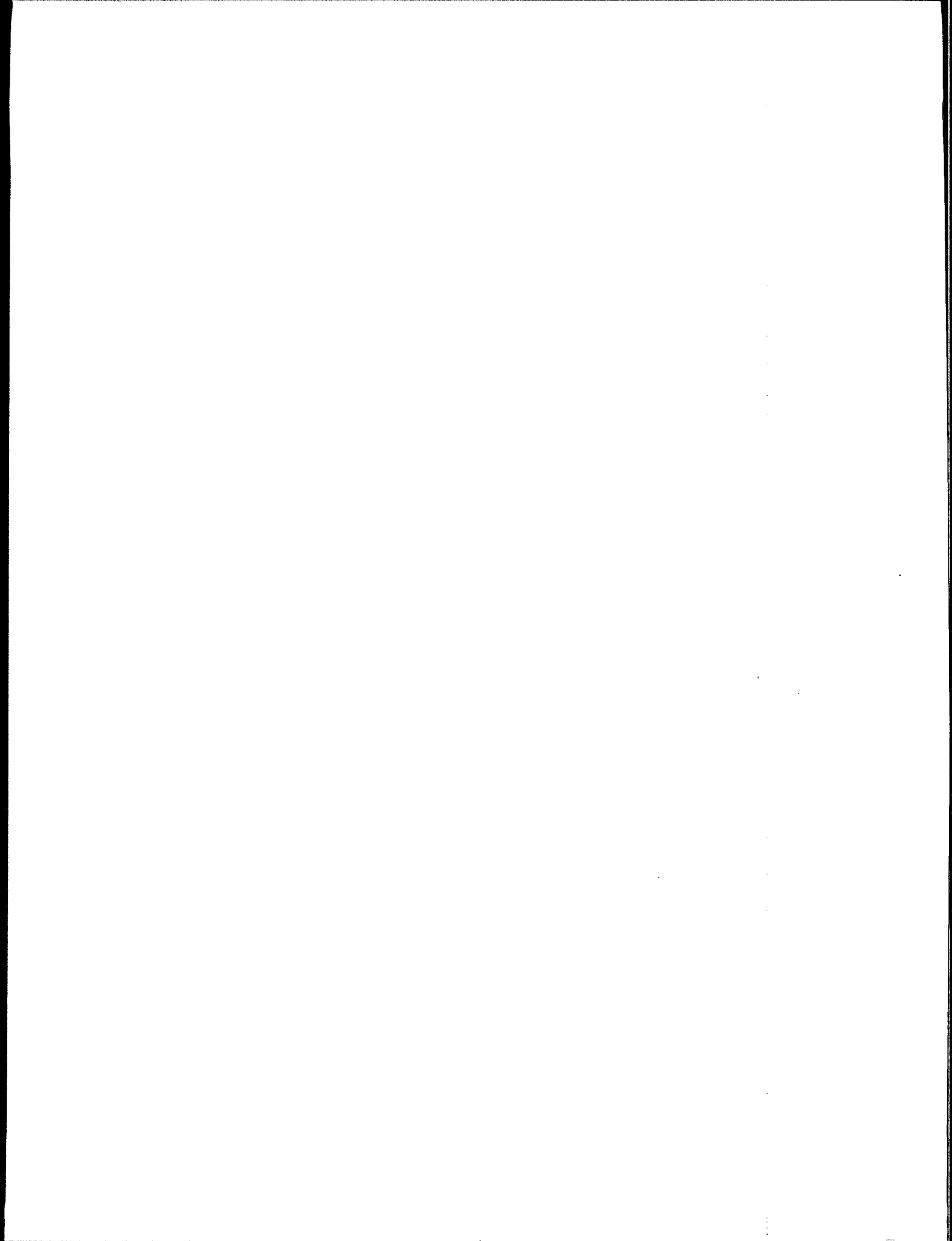
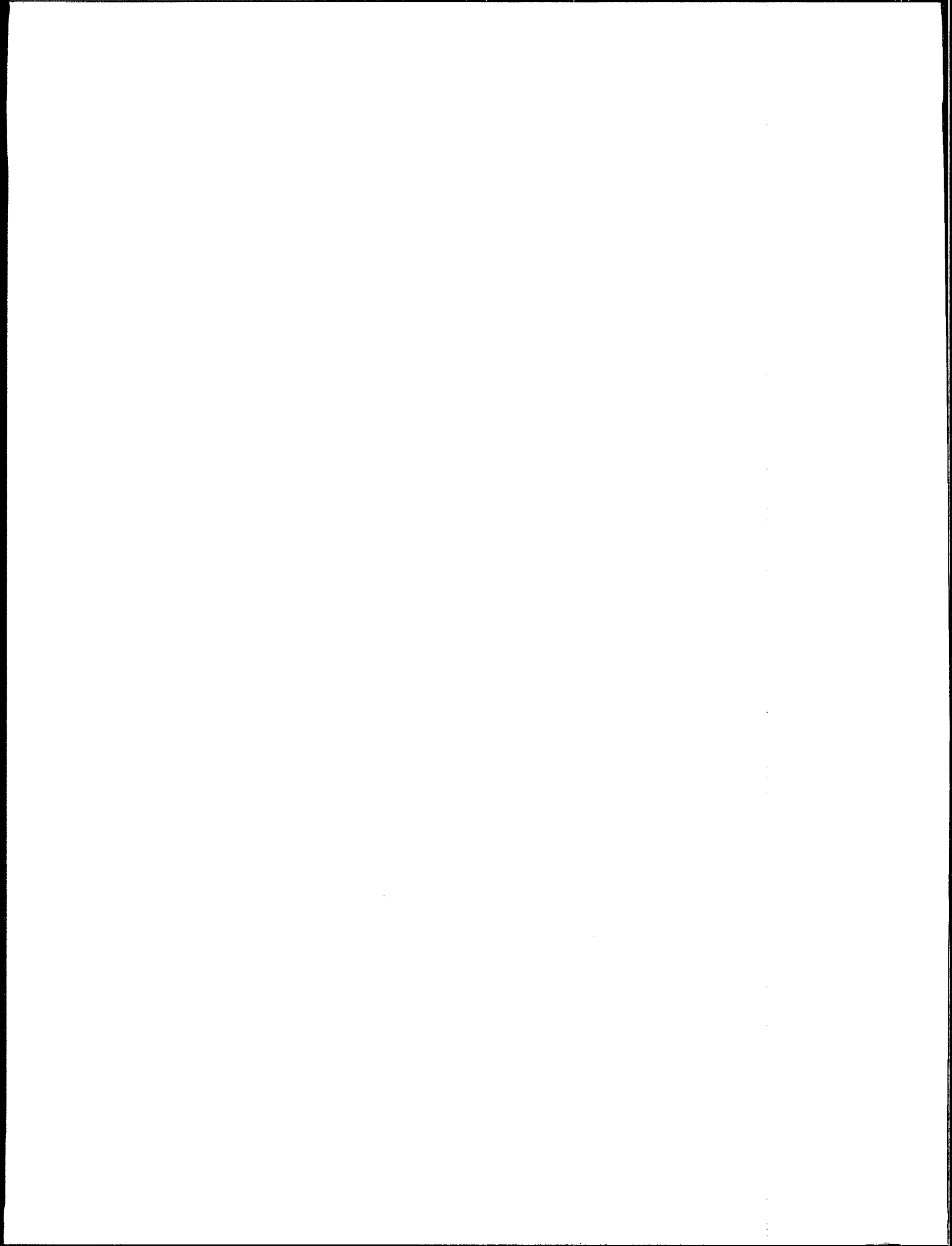


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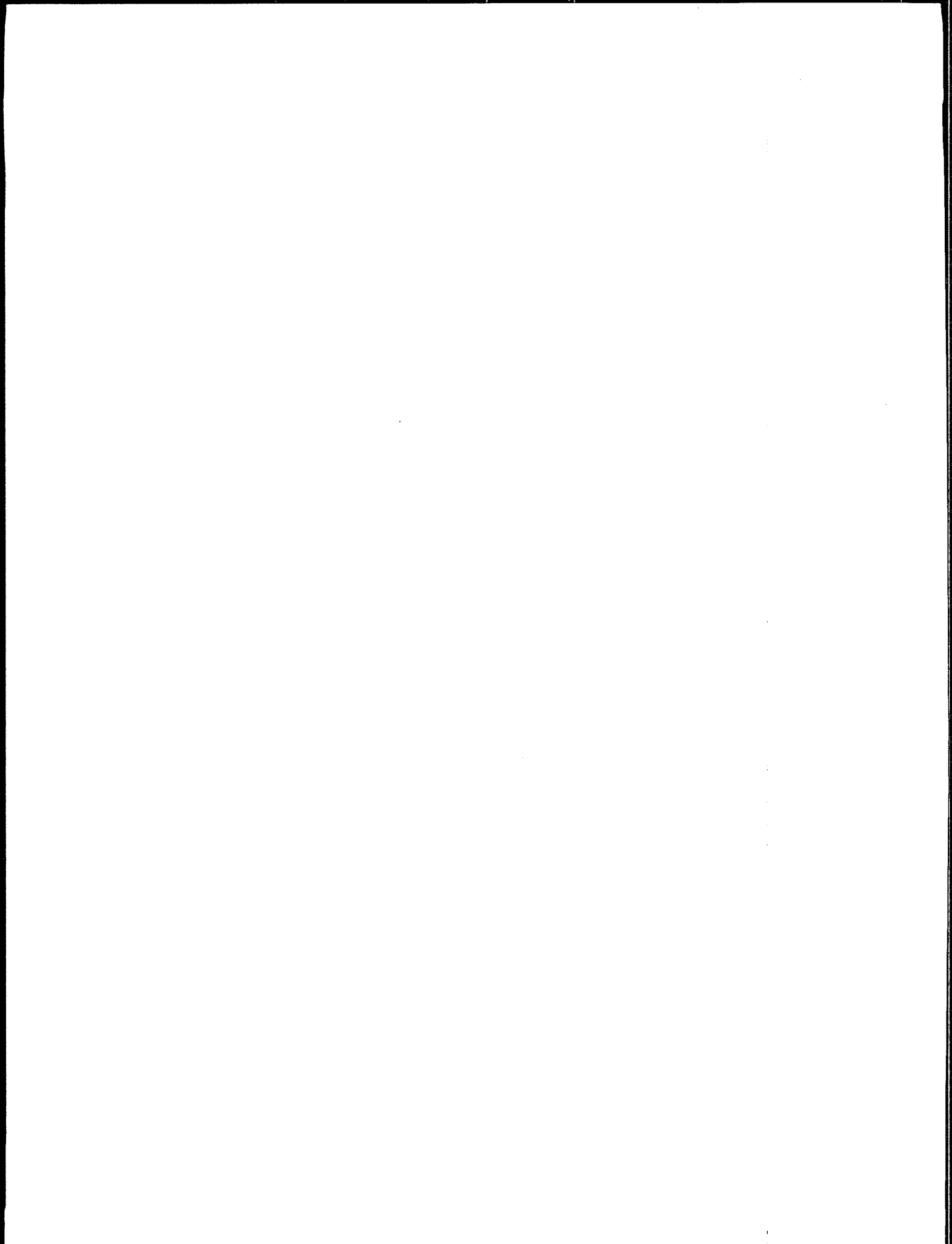
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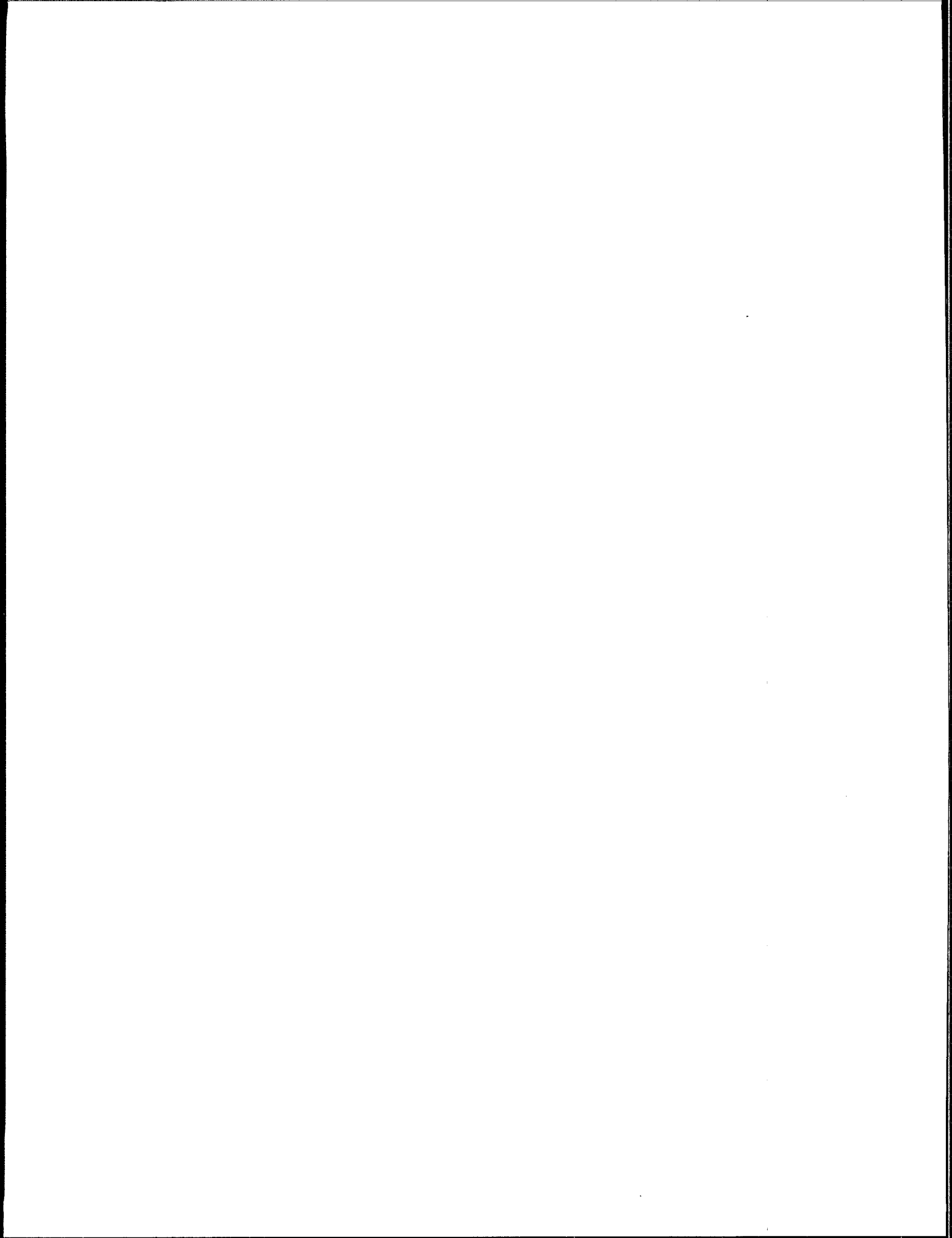


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I. INTRODUCTION

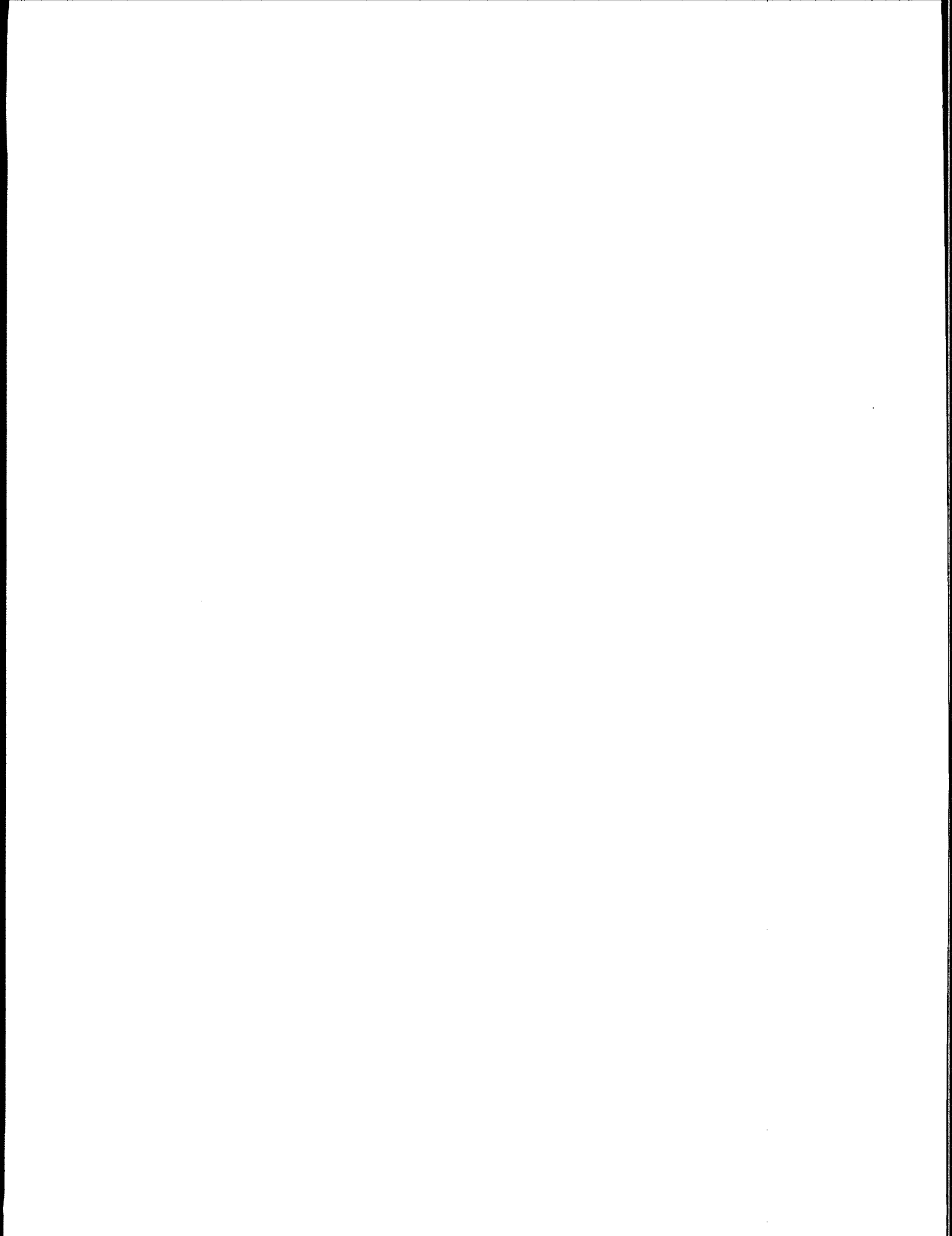
A. WELCOME

B. TRAINING TEAM INTRODUCTIONS

C. WORKSHOP OBJECTIVES

D. WORKSHOP AGENDA

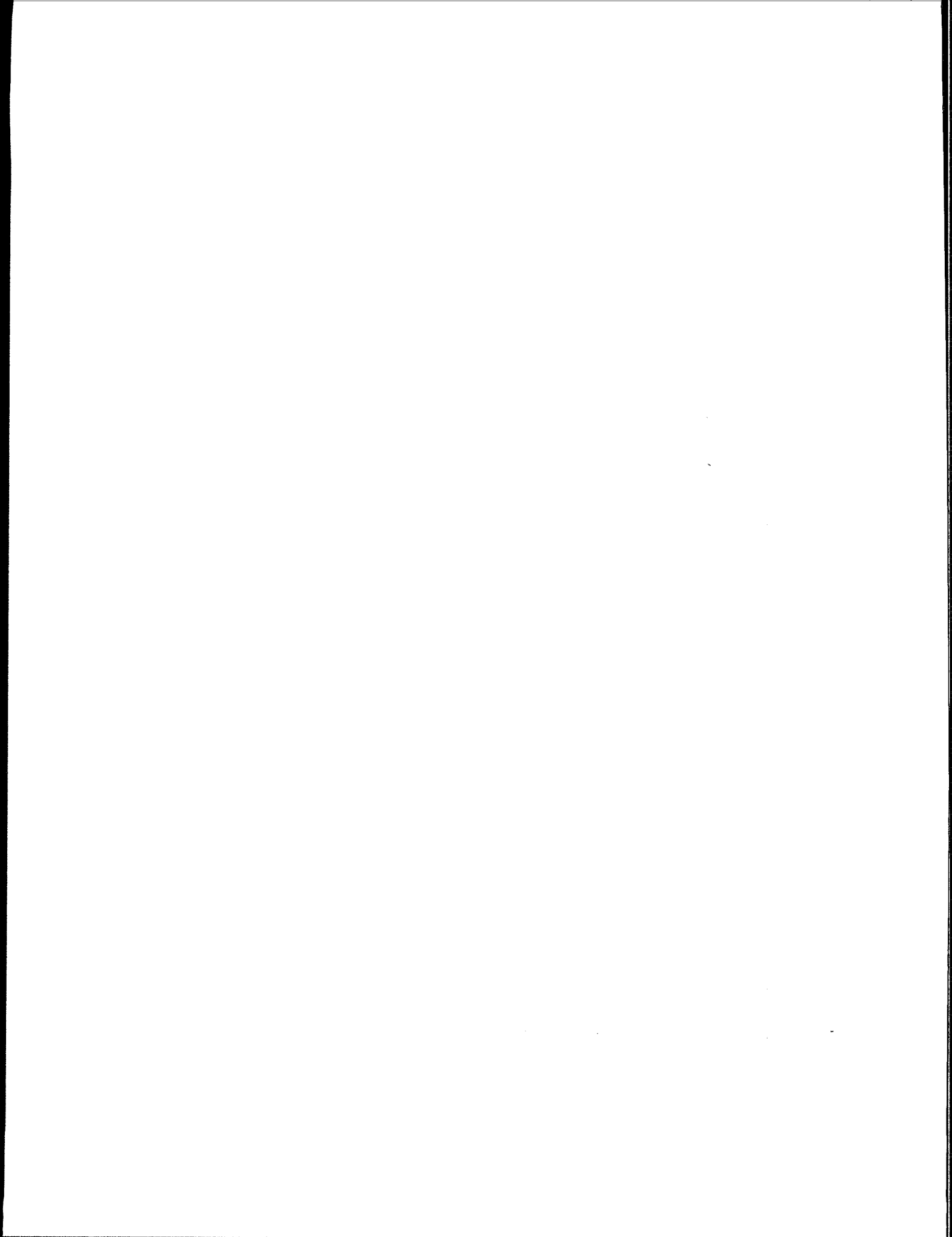
E. PARTICIPANT INTRODUCTIONS



I.A. WELCOME

Notes:

1. *Before the workshop, meet the EPA regional office staff who will be introducing the workshop. Ask that person to introduce him/herself and to provide welcoming statements at the beginning of the workshop.*
 - a. *Point out rest rooms and temperature controls.*
 - b. *Make recommendations about getting around in the city, where to eat, etc.*



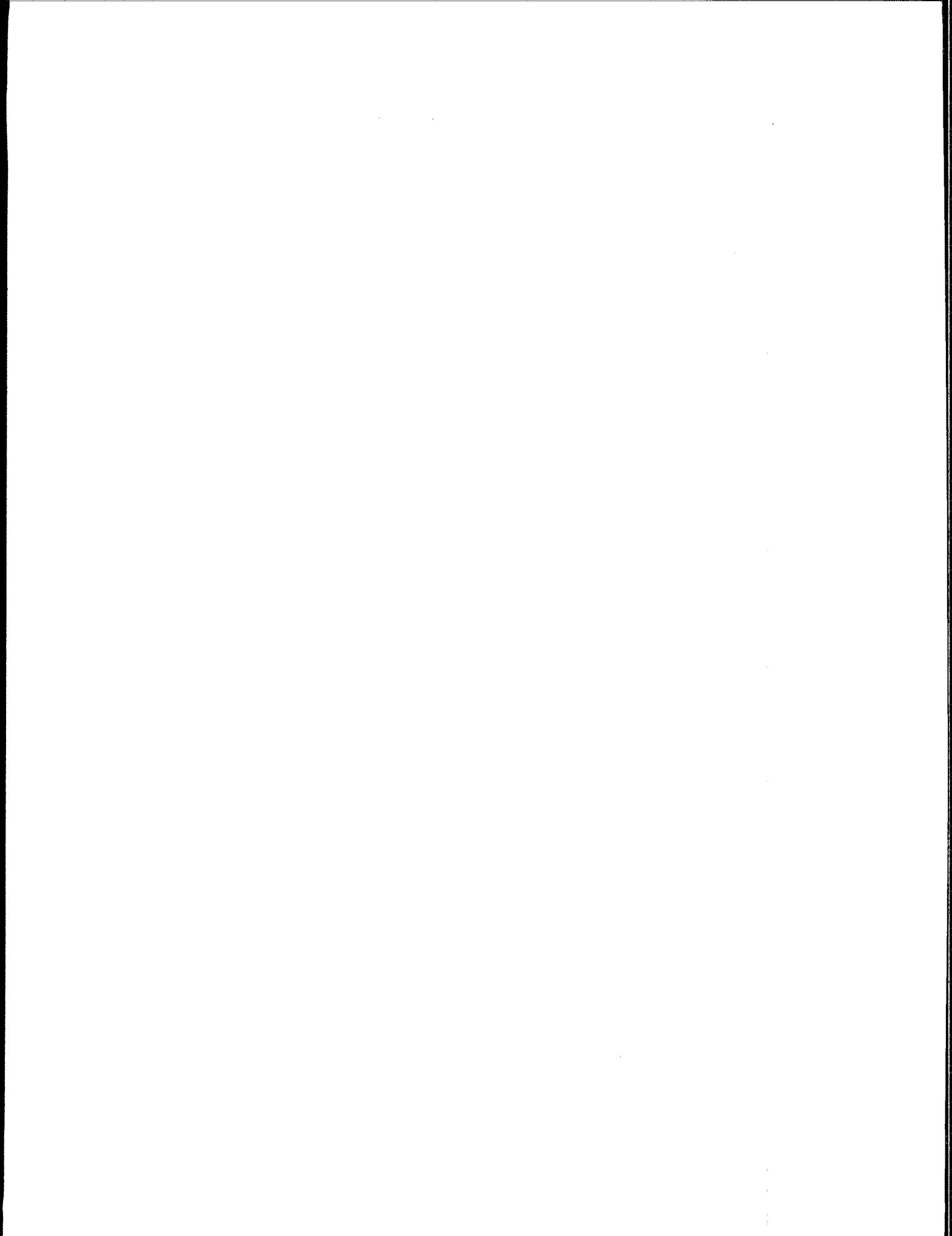
I.B. TRAINING TEAM

Staff from The University of Tennessee Municipal Technical Advisory Service (MTAS) will lead this seminar. MTAS provides technical assistance to Tennessee cities and towns in the areas of finance and accounting, law, engineering and public works and municipal management.

MTAS provides field based assistance, sponsors and administers research projects, produces publications and houses a technical reference library.

Your participation in this course is vital. Please feel free to share your own experiences, comments and questions during the workshop

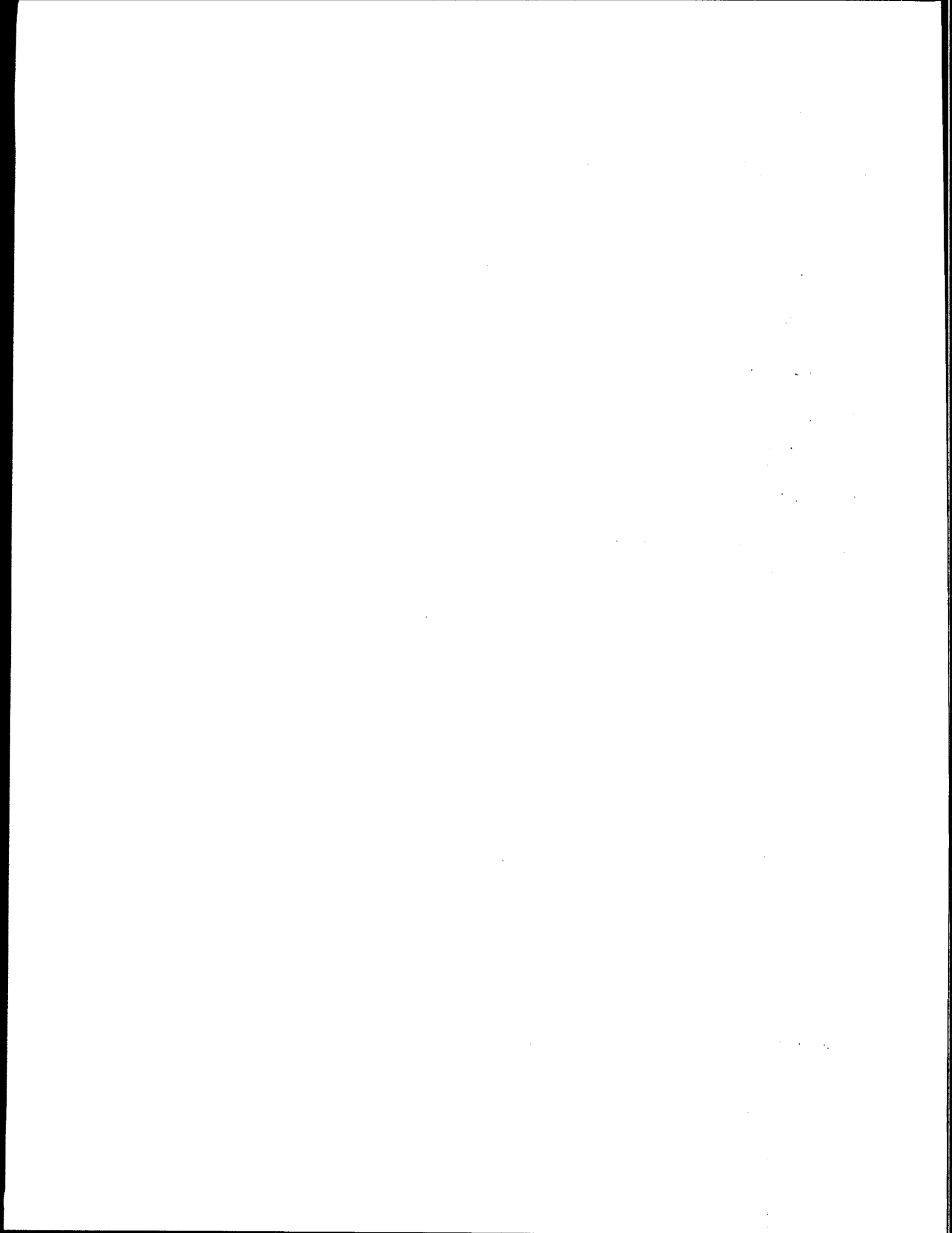
Have each training team member introduce the other. Keep academic background discussion short. Tell something about the person's involvement in a situation to improve financial management in a community.



I.C. WORKSHOP OBJECTIVES

- (1) To emphasize that communities' ability to protect their investment in water and wastewater infrastructure and to maintain sound operations depends on generating sufficient operating revenues.**
- (2) To emphasize that the best source of revenues is user fees.**
- (3) To demonstrate how to determine if a financial management system is healthy.**
- (4) To demonstrate how to evaluate a user service charge system.**
- (5) To demonstrate how to determine rates through use of a computer rate model.**
- (6) To demonstrate how to sell a rate increase.**

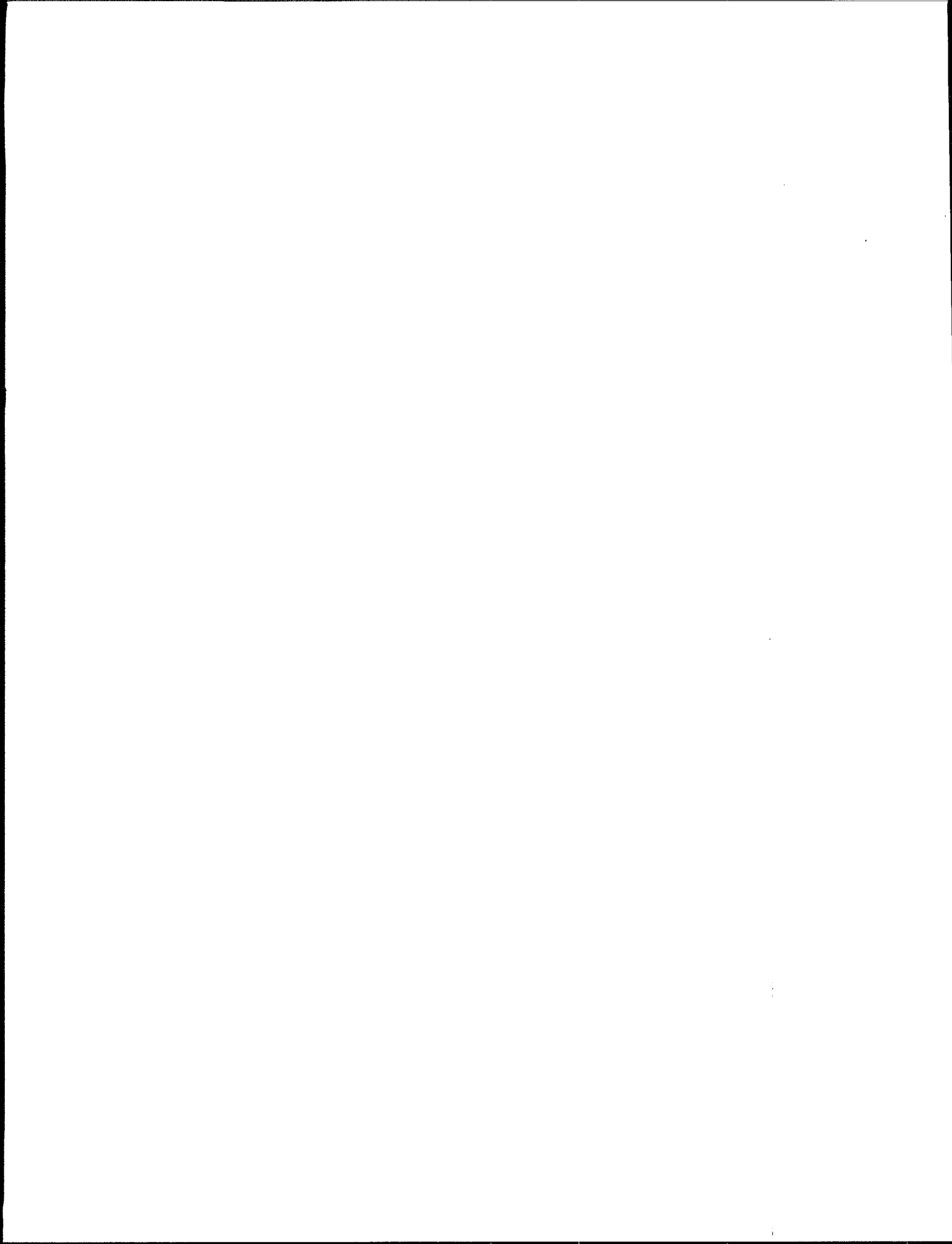
Post these objectives on a flip chart sheet and place them where they can be seen throughout the day. Periodically refer back to the objectives and check whether they are being met.



I.D. WORKSHOP AGENDA

- 8:30 - 9:00 Registration**
- 9:00 - 9:30 Introductions and Workshop Objectives**
- 9:30 - 9:45 The Importance of Good Financial Management**
- 9:45 - 10:30 Principals of Good Financial Management**
- 10:30 - 10:45 Break**
- 10:45 - 12:00 Evaluating User Service Charge Systems**
- 12:00 - 1:15 Lunch**
- 1:15 - 2:15 Determining User Service Charge Rates**
- 2:15 - 2:30 Break**
- 2:30 - 3:30 Selling a User Charge Increase to Customers**
- 3:30 - 4:00 Summary**

Briefly refer to the agenda and mention breaks and refreshments.

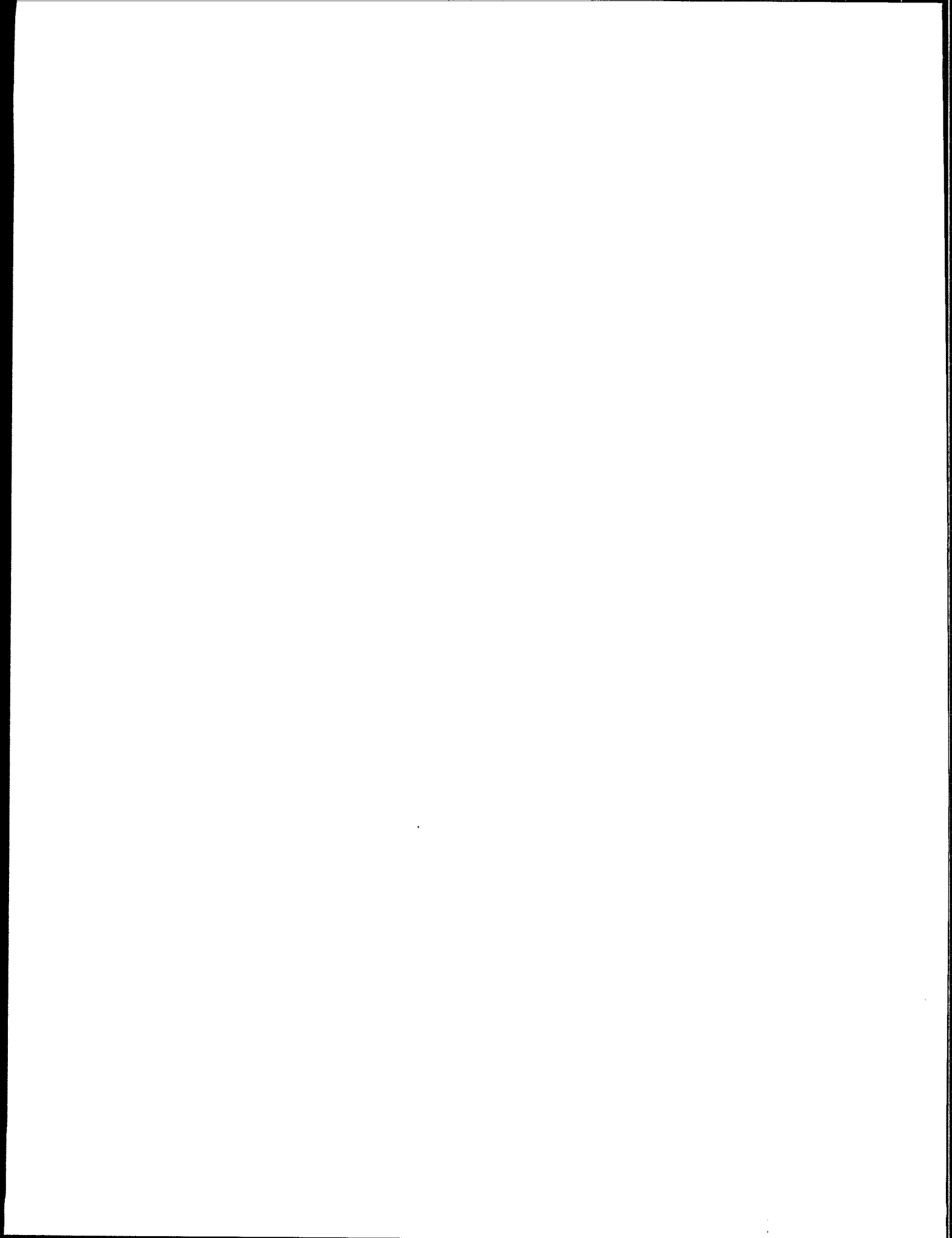


I.E. PARTICIPANT INTRODUCTIONS

Notes:

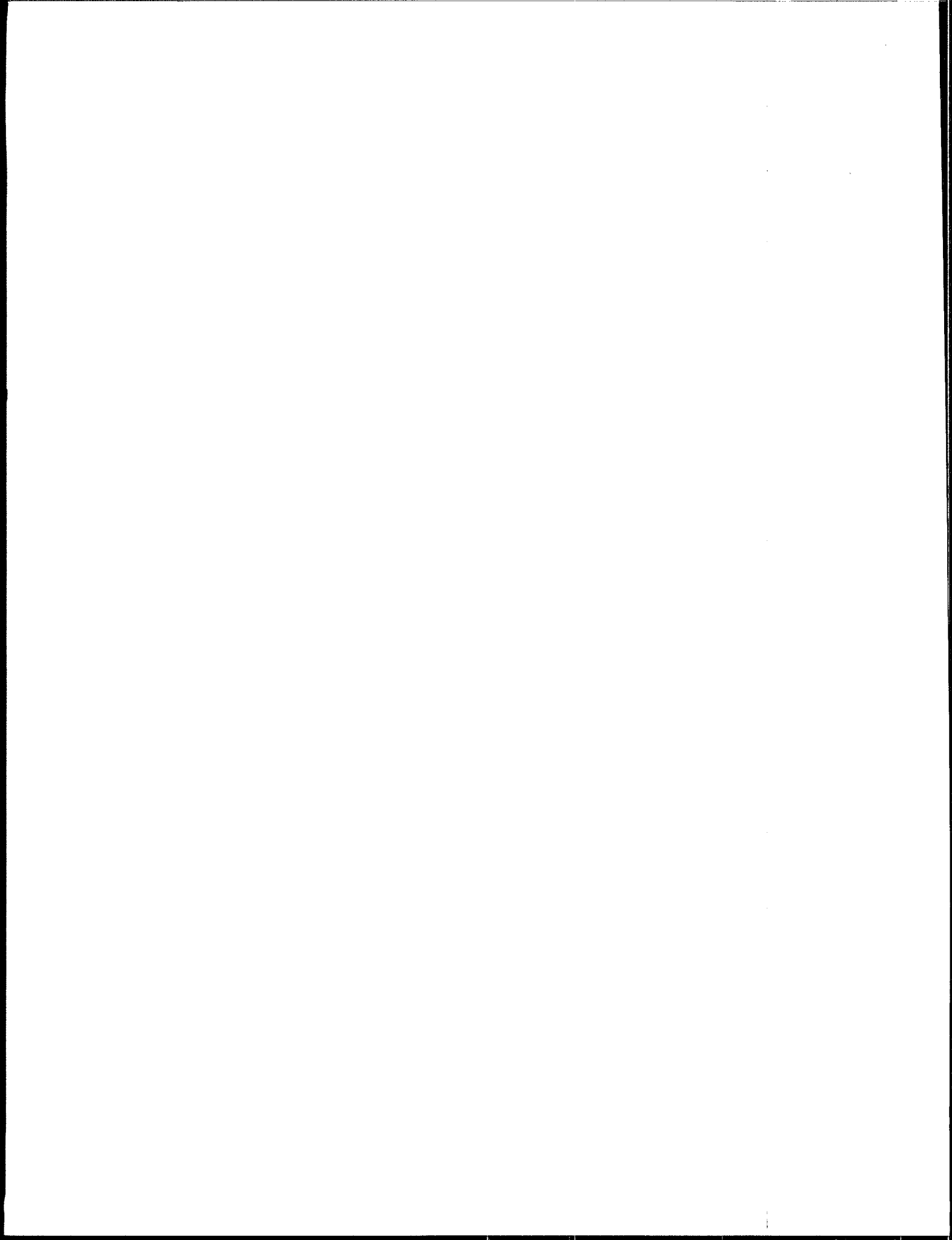
This is an important part of the workshop. The object is make participants comfortable enough to begin talking and interacting. The workshop will be much more beneficial to everyone if participants will begin sharing their own experiences about the topic.

One approach to use: Ask participants to look around and find someone they do not know; introduce themselves to that person; tell each other where you work, why you need information on financial management. Ask them to introduce one another to the group.



- II. THE IMPORTANCE OF GOOD FINANCIAL MANAGEMENT
 - A. WHY COMMUNITIES MUST WORK HARDER AT FINANCIAL SELF-SUFFICIENCY
 - B. THE IMPACT OF FINANCIAL SELF-SUFFICIENCY ON COMMUNITIES
 - C. HELP FOR COMMUNITIES
 - D. WHAT COMMUNITIES MUST DO

Tell the topics that will be covered in this session



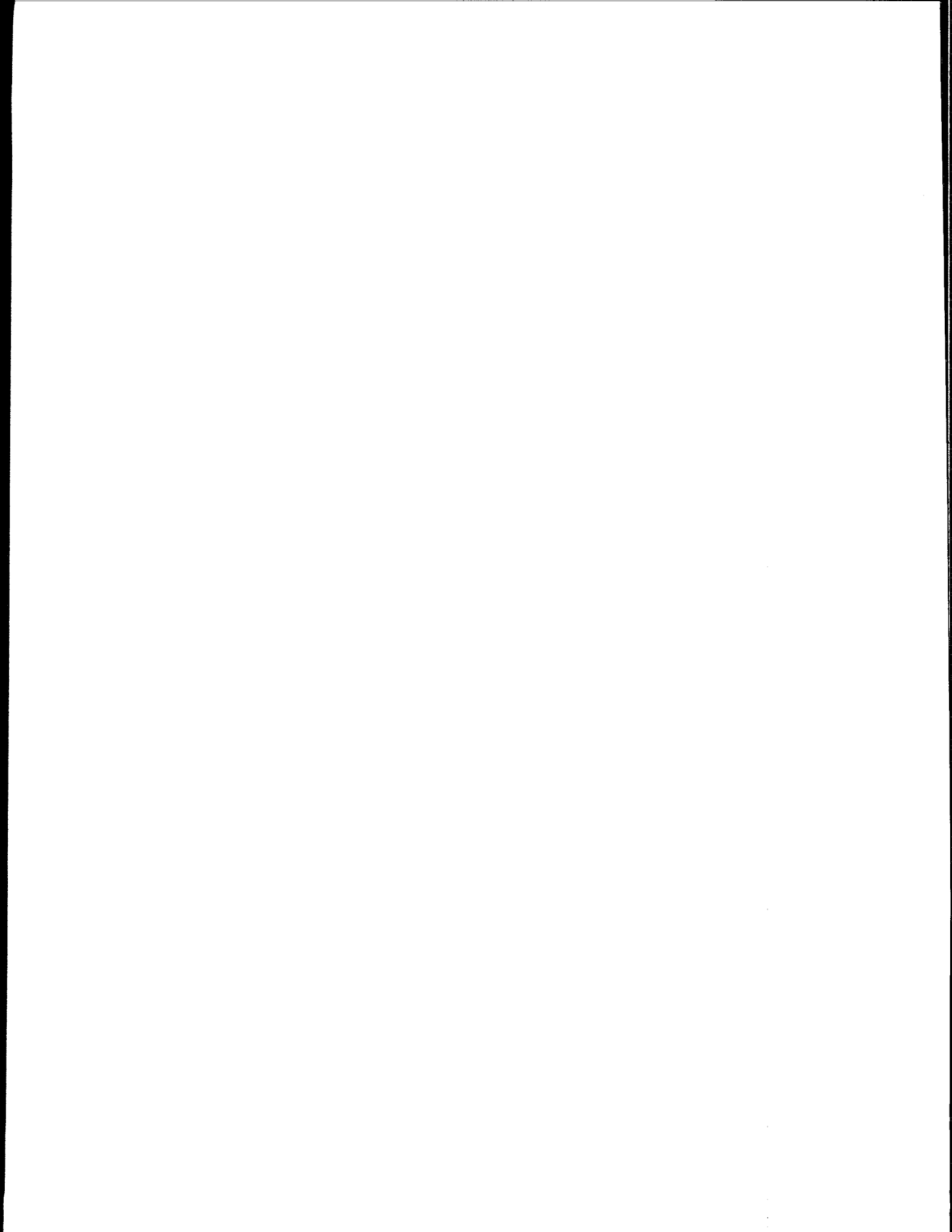
II.A. WHY COMMUNITIES MUST WORK HARDER AT FINANCIAL SELF-SUFFICIENCY

- *The 1987 Clean Water Act amendments place more financial responsibility for wastewater facility construction on local governments.*
- *EPA grants (for facility construction) are no longer available; SRF loans are available, but the entire principal and interest must be repaid over a 20 year period.*
- *The loaners (EPA and states) must have assurance that the borrower is a good risk; i.e. they must have assurance that the borrower is able to make repayments.*
- *This leads to greater front-end scrutiny of the borrower's user charge system.*
- *User charge systems are the principal method enterprise fund operations have for raising revenues.*
- *Water and wastewater operations are usually run as enterprise funds. This means that the operations are run as a self-supporting business.*

* 1987 Clean Water Act Amendments

Out with Grants

In with SRF Loans



- *Use Overhead # 1*
- *Since 1972 these amounts have been spent in the EPA Construction Grants program.*
- *All that federal and state grant money had the effect of reducing user charges by an average of 50%.*

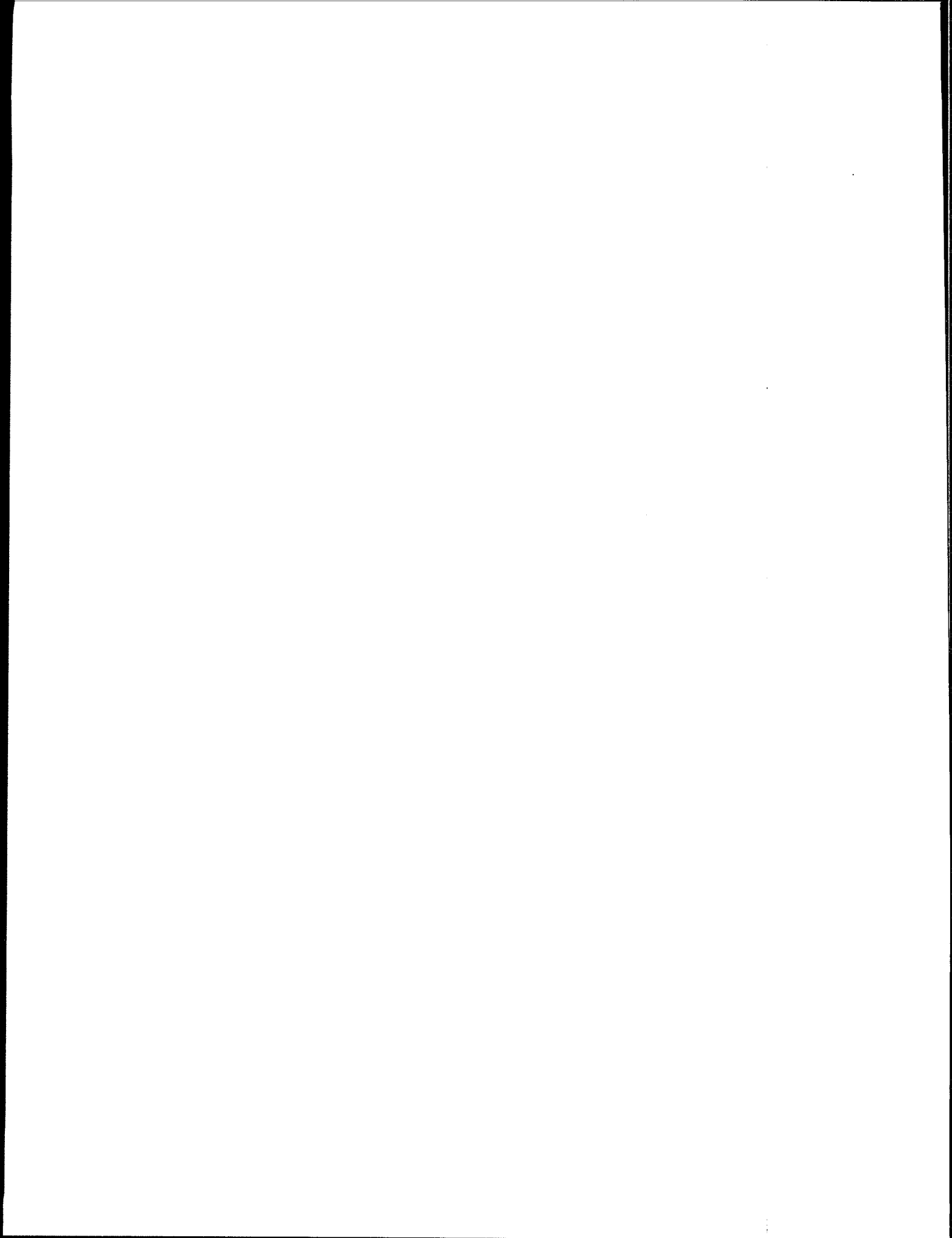
* **\$ Spent in the Wastewater Grants Program Since 1972**

Federal	\$53 Billion
States	\$20 Billion
Local	\$20 Billion

- *The most recent EPA Needs Survey shows that we still have \$83 billion in wastewater facility needs in this country.*
- *So, almost as many needs exist today as all the funded needs during the last 18 years.*
- *In the past 18 years, local governments had a chance of getting grants to help meet these needs. Now about the best they can hope for is a low interest loan.*
- *And even loans are short of anticipated levels. The SRF loan program was to provide \$18 billion in capitalization grants to states through 1994, but FY89-90 appropriations were 20% short of the authorized level.*

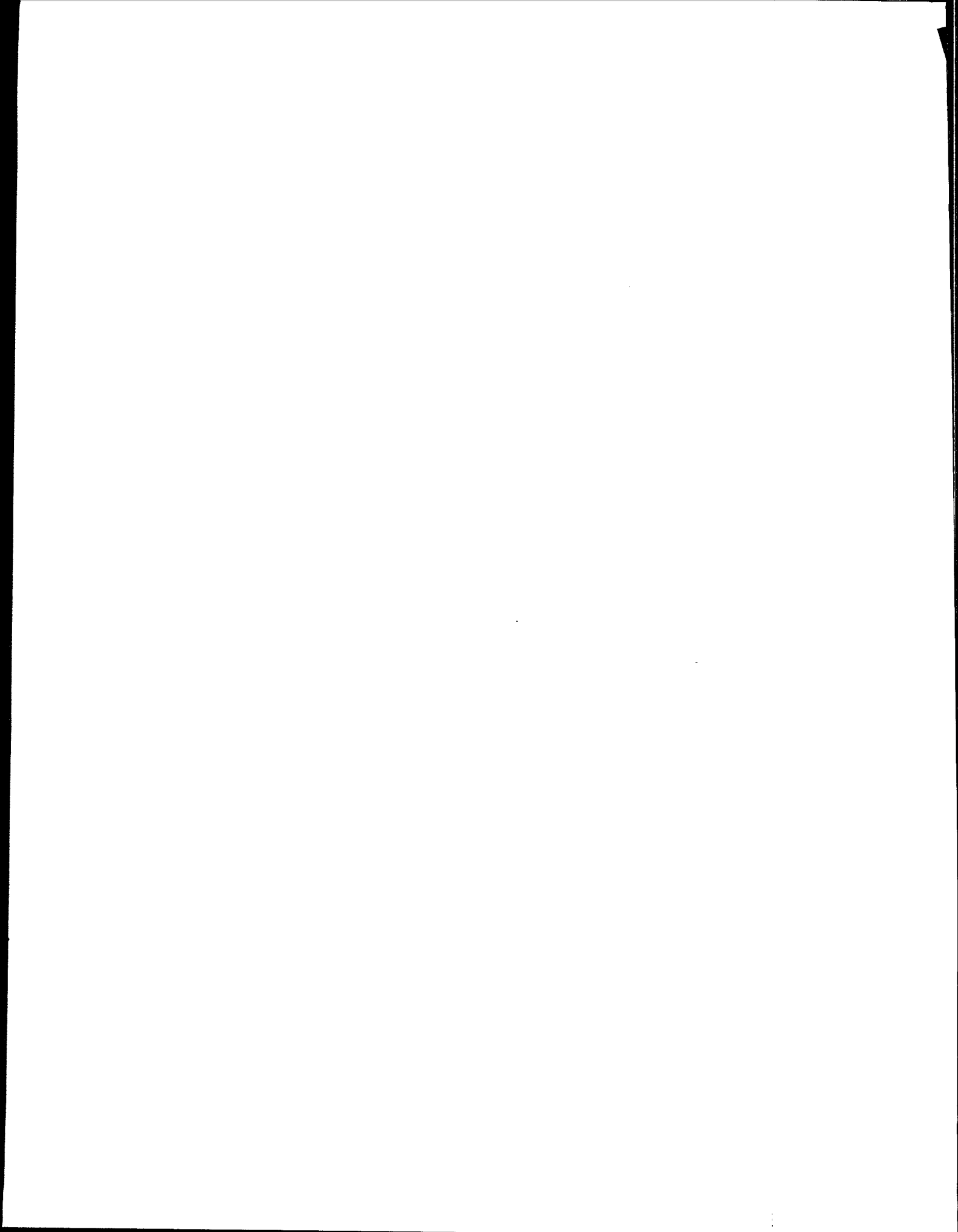
* **\$ in Needs for Wastewater Facilities**

Wastewater Needs	\$83 Billion
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II.B. IMPACT OF FINANCIAL SELF-SUFFICIENCY ON COMMUNITIES

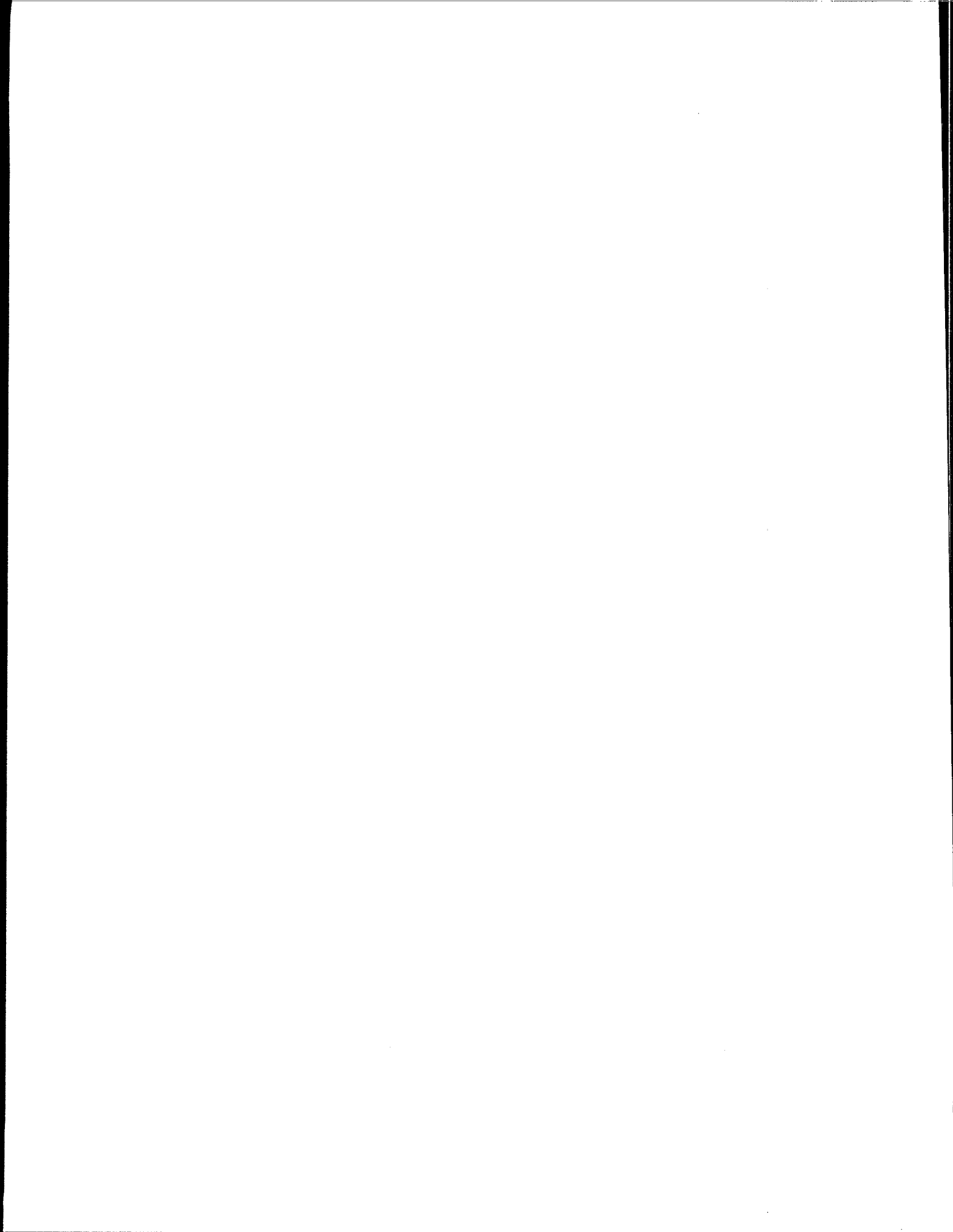
- *So, how are local governments handling this new reality? Not well!*
- *Even before the demise of grants, state and local governments finances were awash in red ink.*
- *Use Overhead # 2*
- *Whereas, state and local government budgets showed a \$5 billion surplus in 1986; they showed a \$45 billion deficit in 1990.*
- * **\$5 billion surplus in 1986 to \$45 billion deficit in 1990**
- *Use Overhead # 3*
- *An EPA study showed that 37% of the EPA wastewater funded systems are not collecting sufficient revenue from user service charges and hookup/impact fees to cover operating cost.*
- *The average shortfall in these inadequately funded systems is 25%.*
- *As communities assume more of the burden of capital projects as well as operation and maintenance costs, they must raise user charges.*



- * **37% EPA wastewater funded systems experiencing shortfalls in revenue**

- * **Water systems confront new monitoring costs**

- *Amendments to the Safe Drinking Water Act equate to new monitoring requirements for water systems. The associated costs will surely require those water systems to generate additional revenues.*



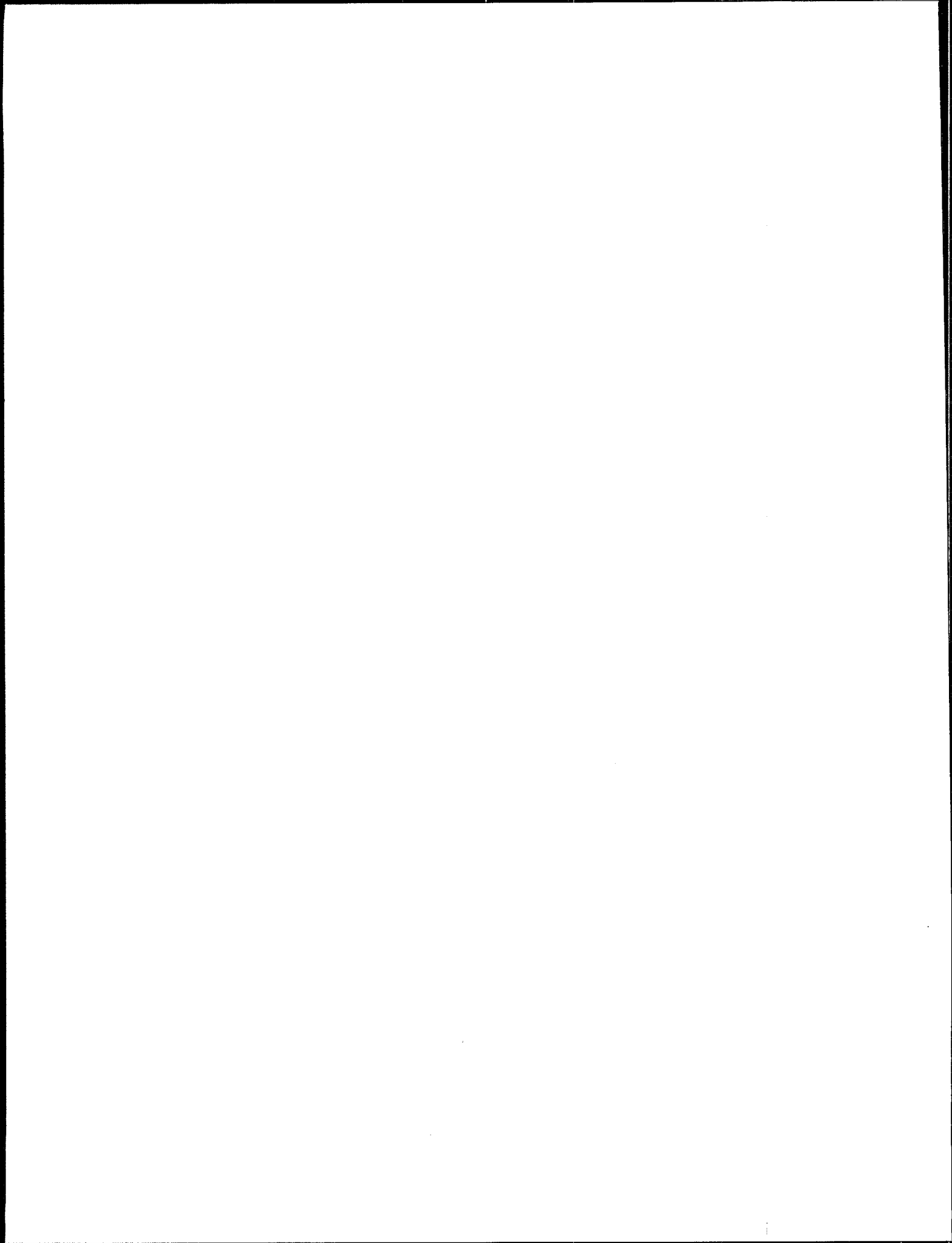
II.C. **HELP FOR COMMUNITIES**

- *There are some resources for local governments. They are not grant dollars, but these resources can help local governments use their dollars more wisely.*
- *Use Overhead # 4*
- *One important resource is the Small Communities Outreach and Education Program - SCORE.*
- *One way SCORE can help is through providing information on complex issues in simple, easy to understand language. The booklets found in your notebooks are examples. (Hold up one or more examples).*
- *Another way is through SCORE Coordinators in the state and EPA Regional Offices. Ask the SCORE coordinators to stand. Ask if there is anything they want to say about how SCORE helps local governments.*

- * **Small Communities Outreach and Education Program
(SCORE)**

Informational Assistance

EPA Regional Office Coordinators



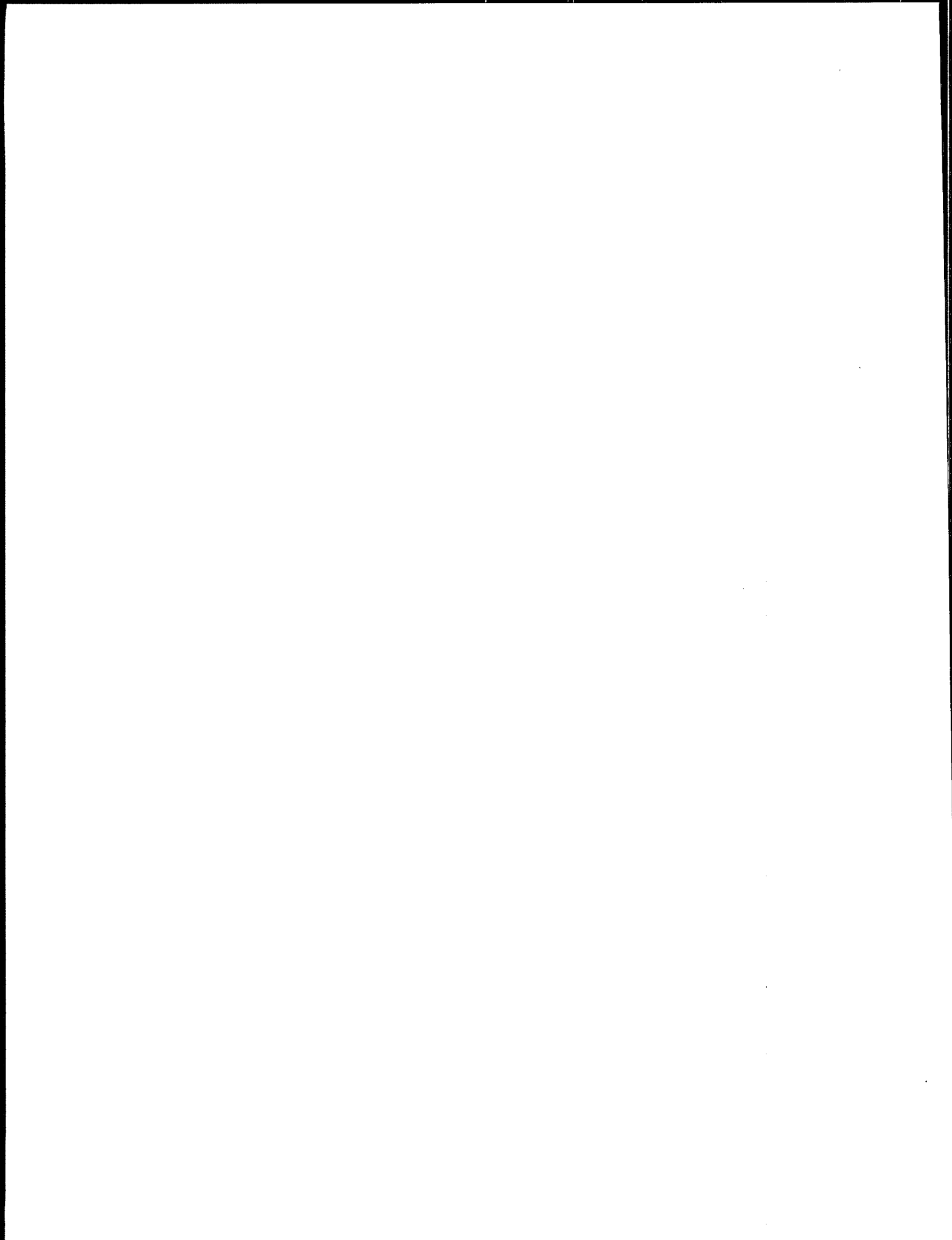
- *SCORE facilitates networking through other federal agencies and national organizations. (List the FmHa, HUD, WPCF, AWWA, other environmental and civic groups). They are in touch with these organizations and offices. They share information and experiences. They attend conferences and exchange publications.*

Networking other Federal and National Organizations

- *Overhead # 5*
- *And they provide assistance through the National Small Flows Clearing House. List some functions, such as - toll free no. -- 1-800-624-8301, publication, user charge survey analysis, etc.*

National Small Flows Clearing House

1-800-624-8301



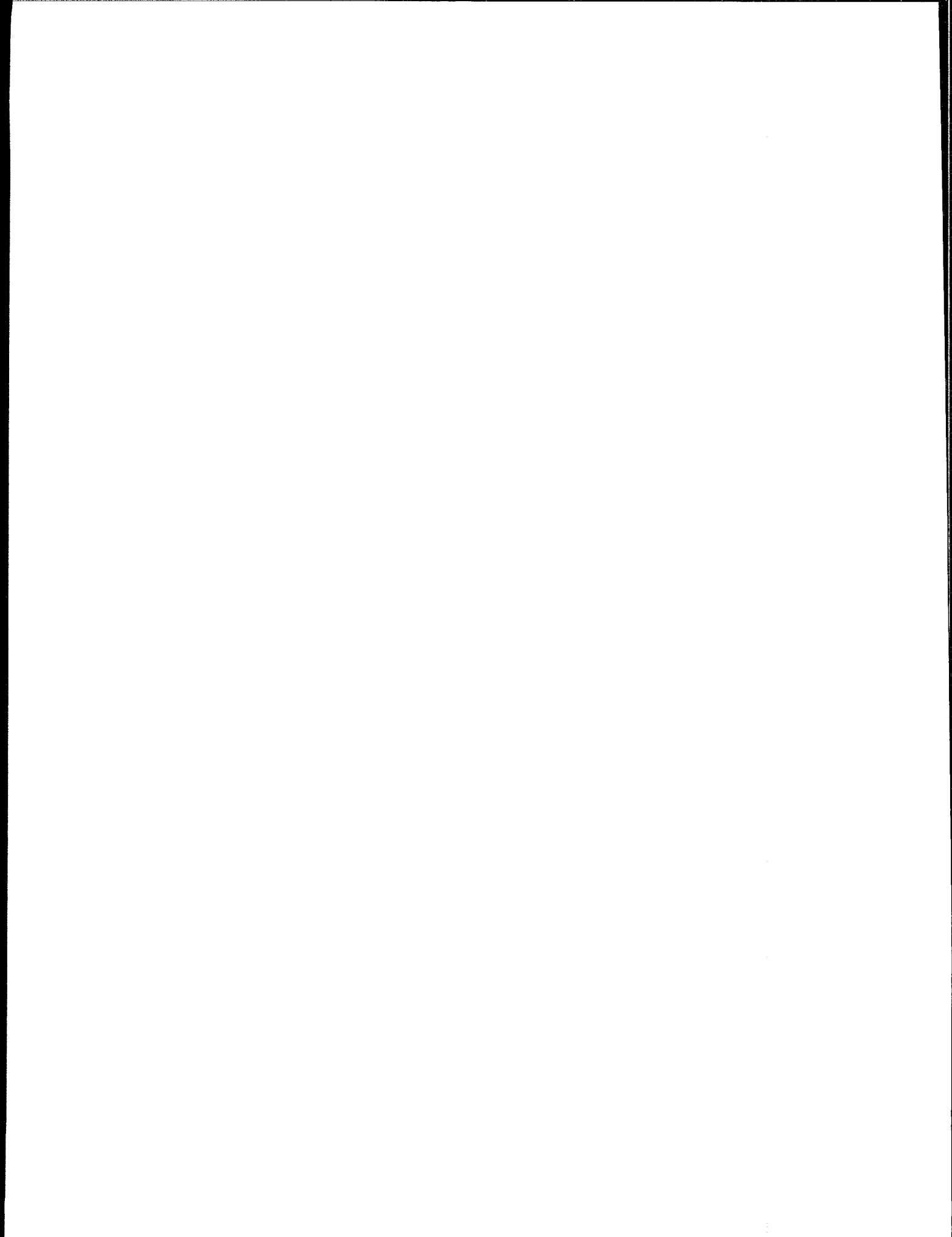
II.D. WHAT COMMUNITIES MUST DO

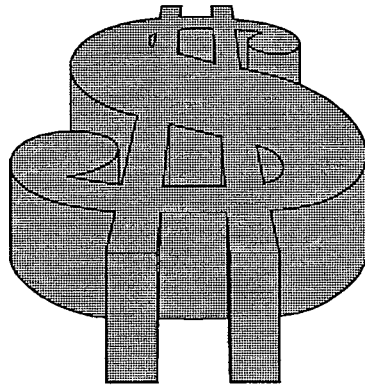
- *Communities need to undertake major tasks. They must improve financial management of their water and wastewater operations. This probably means they need to raise user service charges.*
- *The rest of this workshop will show the steps local governments need to take to accomplish these things.*
- *It will show you how communities accomplish this task.*

* Implement Financial Self-Sufficiency

Improve Over-All Financial Management

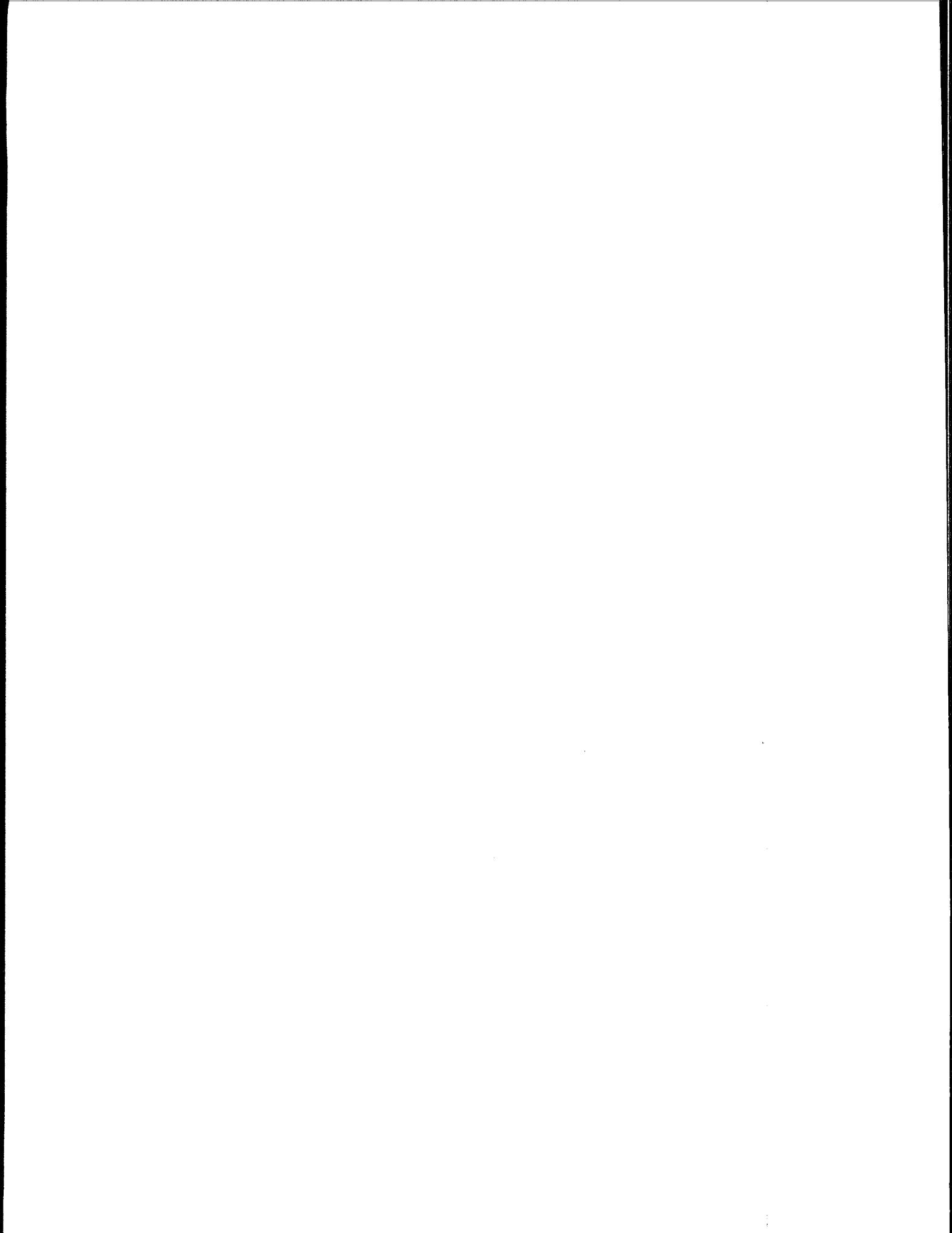
Raise User Service Charges





SPENT IN THE WASTEWATER GRANTS PROGRAM SINCE 1972

FEDERAL	\$53 BILLION
STATES	\$20 BILLION
LOCAL	\$20 BILLION



THE CHANGE IN LOCAL GOVERNMENTS' BUDGETS

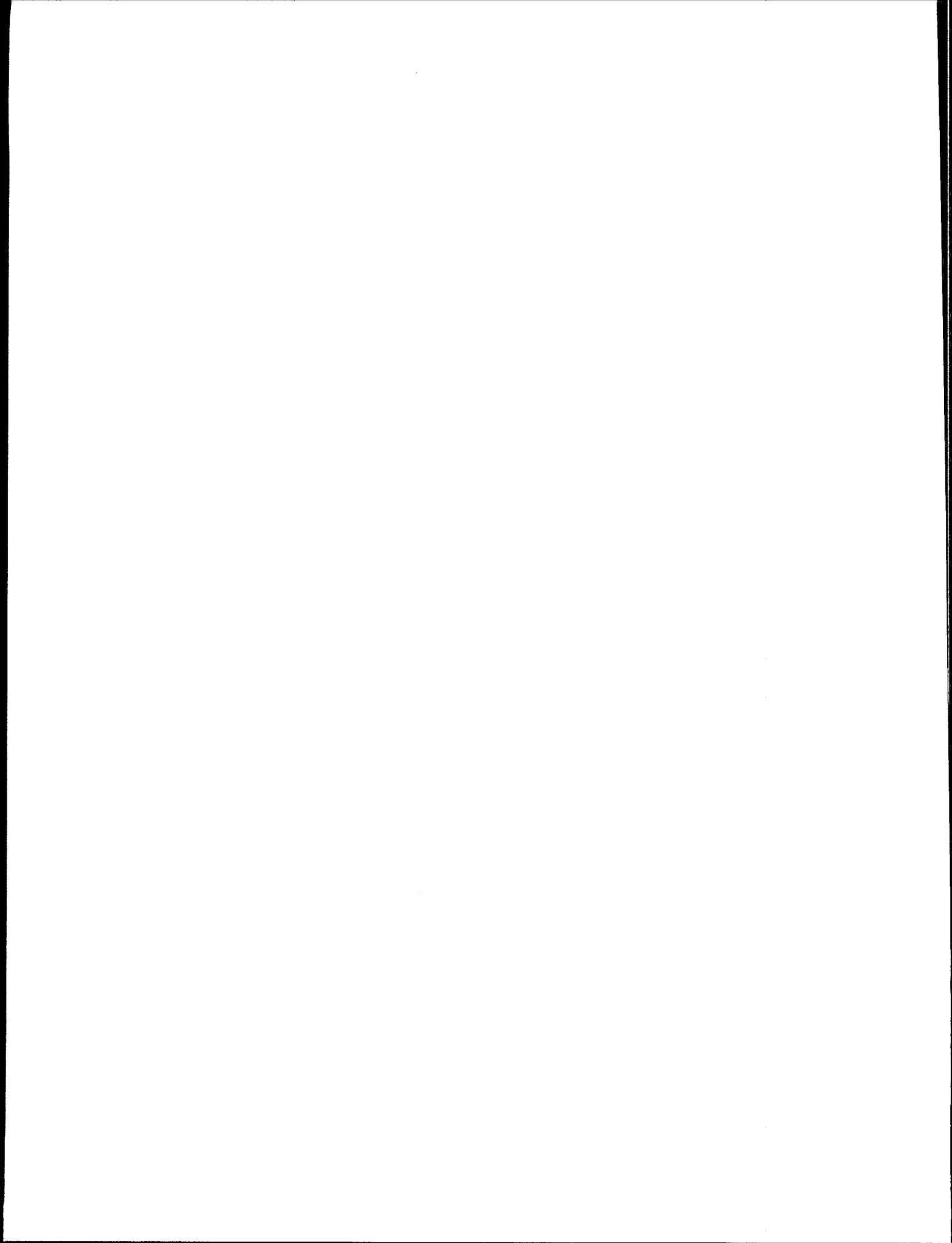


1986

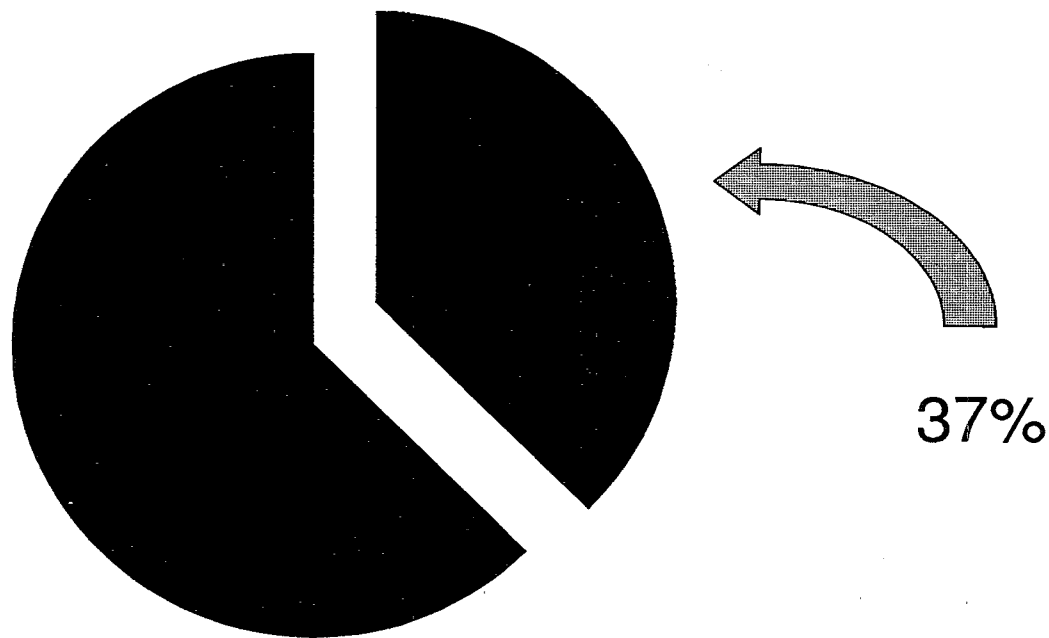
+ \$5 BILLION

1990

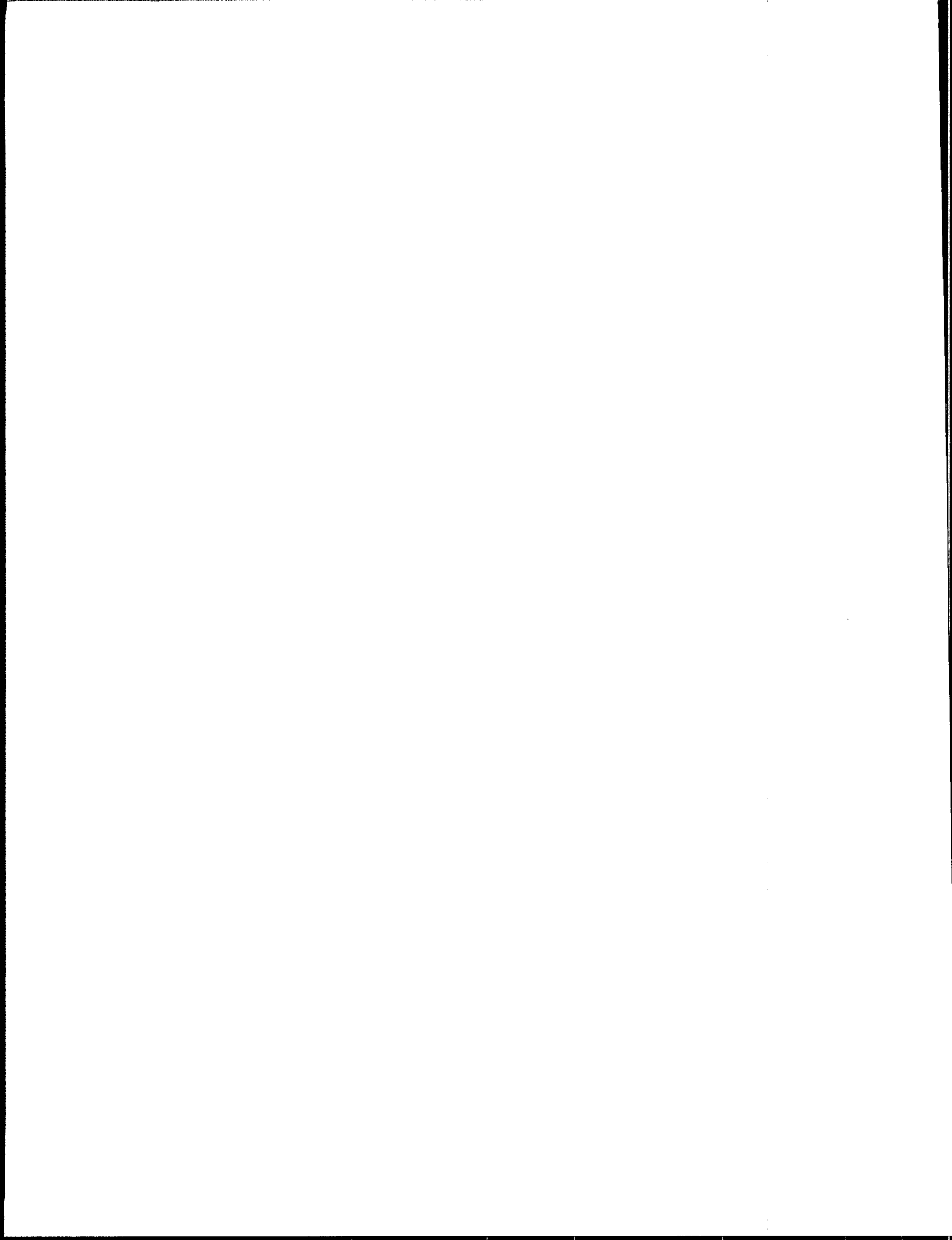
- \$45 BILLION



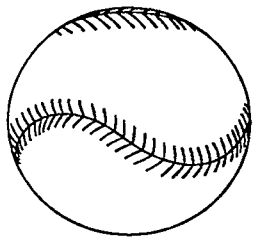
37%
OF EPA-FUNDED SYSTEMS
EXPERIENCE SHORTFALL
IN REVENUE



EPA-FUNDED SYSTEMS



SMALL COMMUNITIES

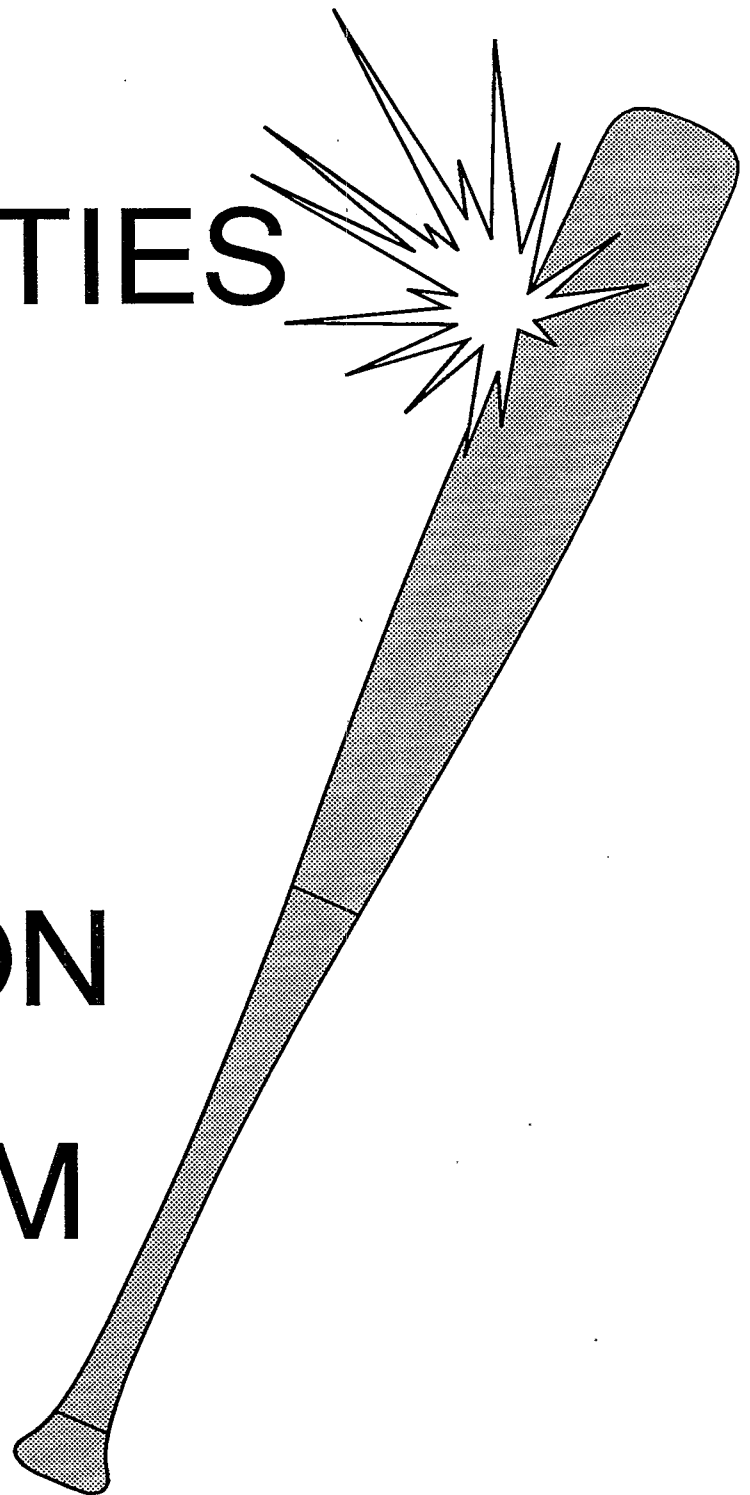


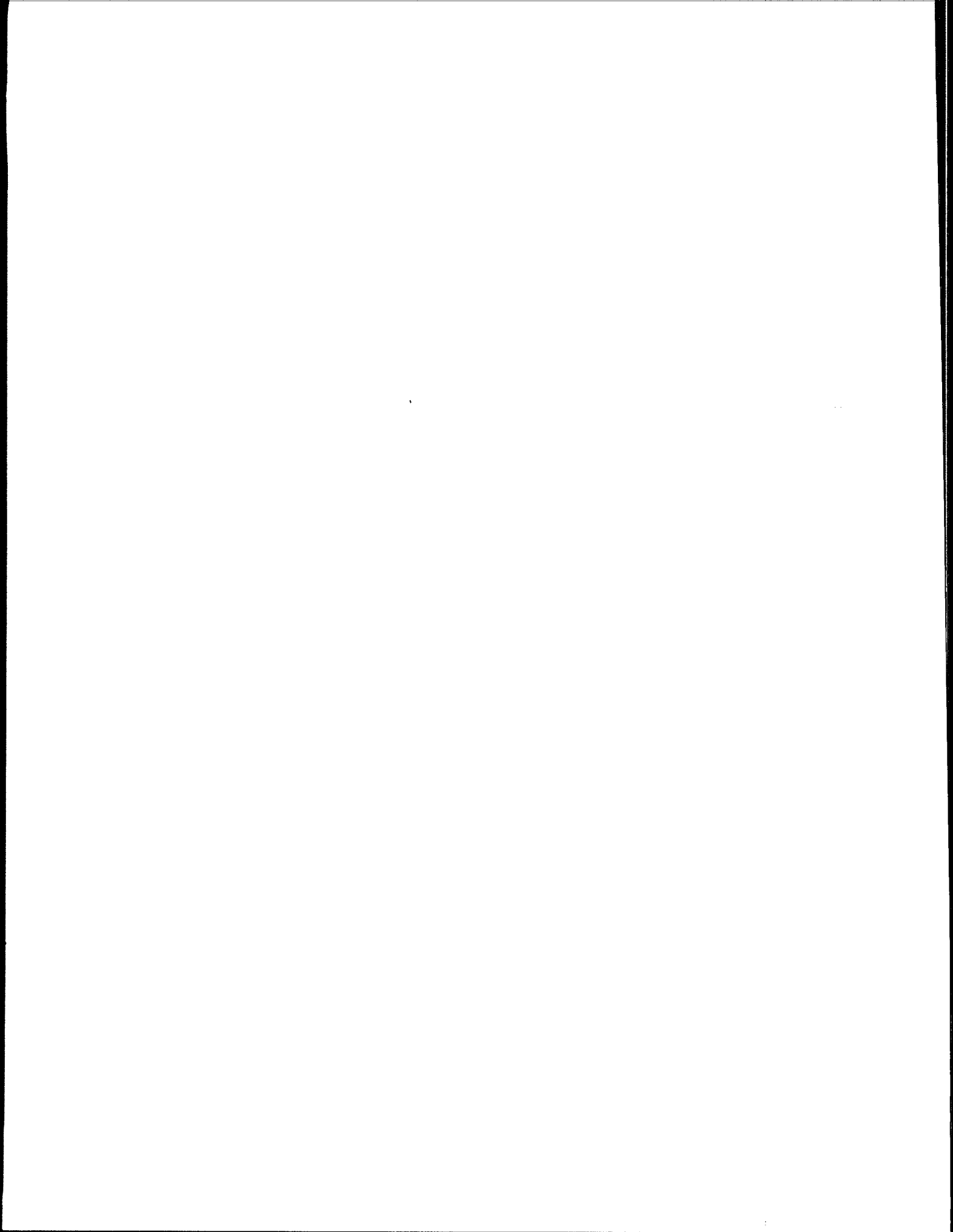
UT-

REACH

EDUCATION

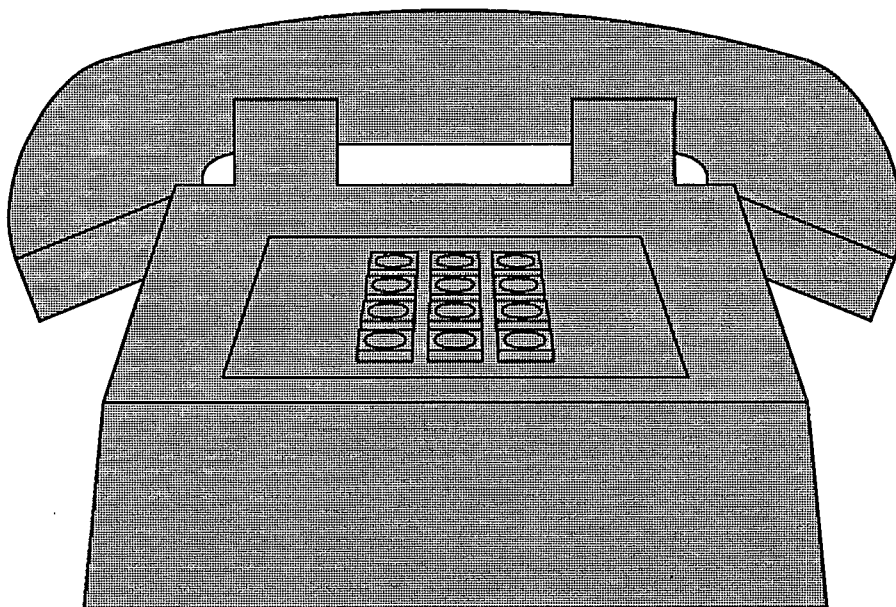
PROGRAM

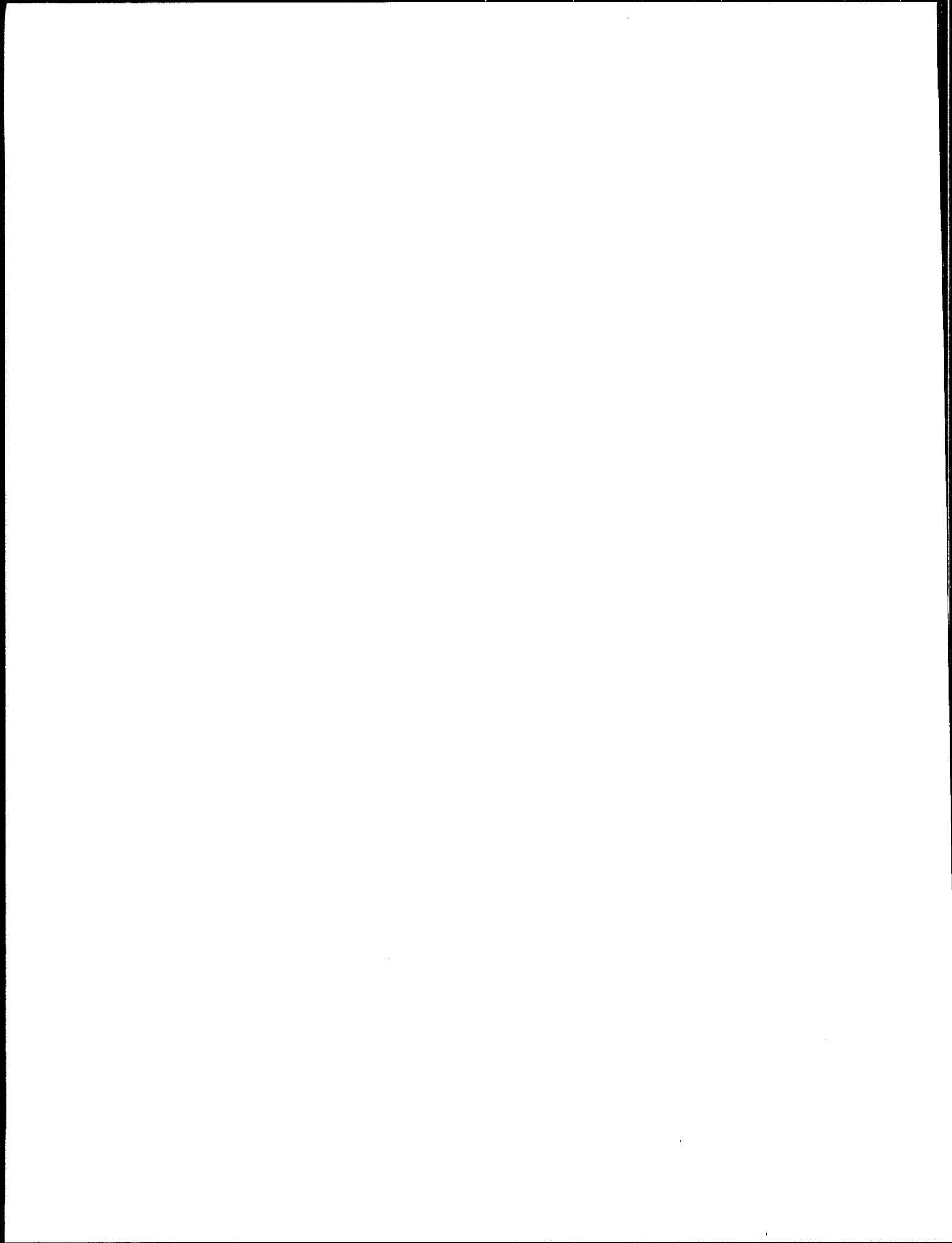




NATIONAL SMALL FLOWS CLEARING HOUSE

1-800-624-8301

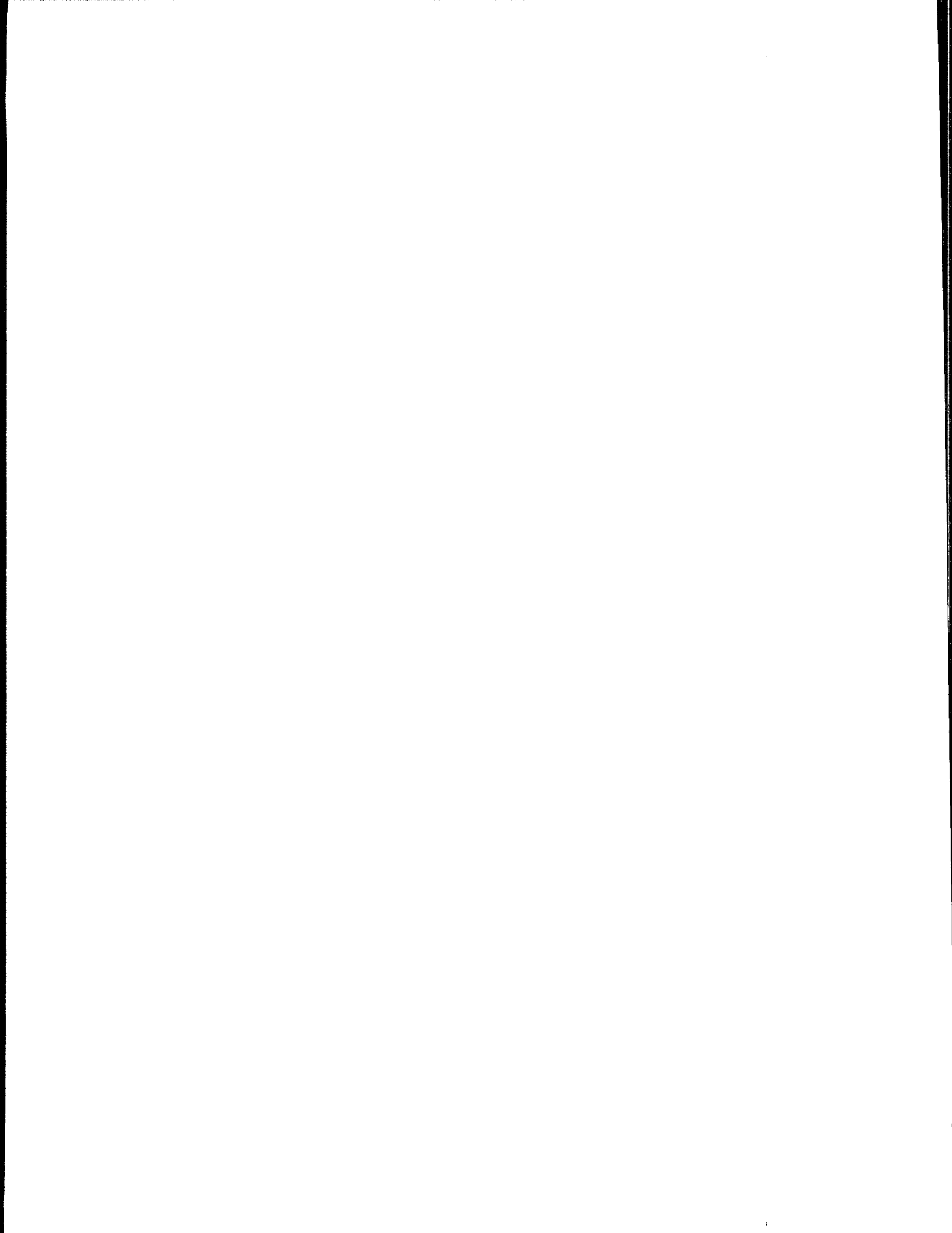




III. PRINCIPALS OF GOOD FINANCIAL MANAGEMENT

- A. CHECK FINANCIAL HEALTH**
- B. IMPROVE FINANCIAL HEALTH**
- C. BUILD FINANCIAL HEALTH**
- D. ADDITIONAL FACTORS THAT AFFECT FINANCIAL HEALTH**

Tell the topics that will be covered in this session



III. PRINCIPALS OF GOOD FINANCIAL MANAGEMENT

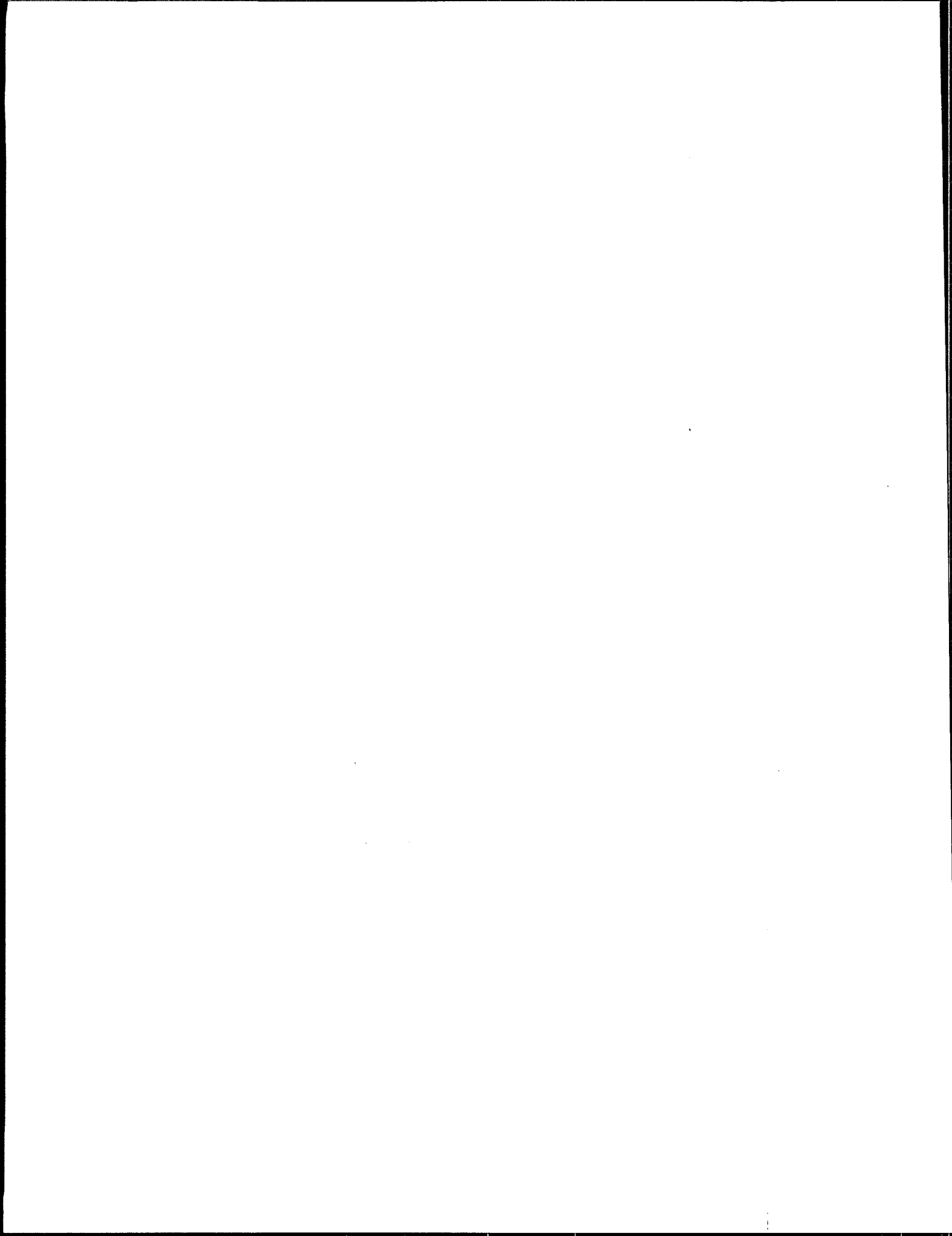
A. CHECK FINANCIAL HEALTH

* Introduction

- *Many people find financial terms confusing. The language of accountants and auditors is often technical and intimidating for non-accountants. But, even if you have no experience with financial terms, you already know some important basics about finance. You have certain expenses like rent, food, utilities and so forth to pay each month. You know how much money you'll earn each month. You know how to balance expenses and income. This section will present some simple financial management tools that are easy to apply to check the financial health of a water or wastewater utility.*
- *A financial health check lets you gage the health of your utility's operation, and it helps you take corrective measures to make sure your operation is self-supporting.*

* Ratios

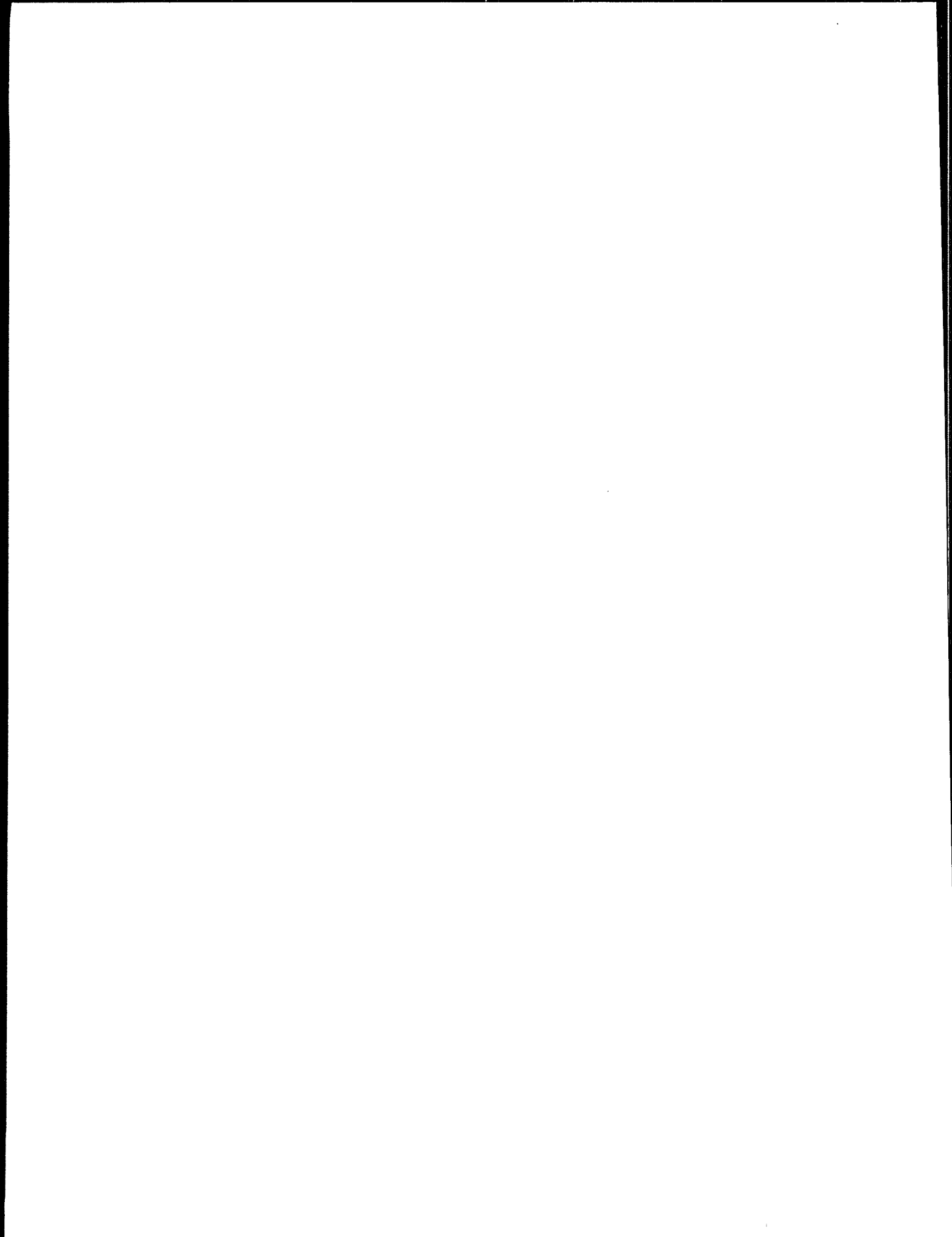
- *Ratios are quick ways of checking on the financial health of a utility operation.*



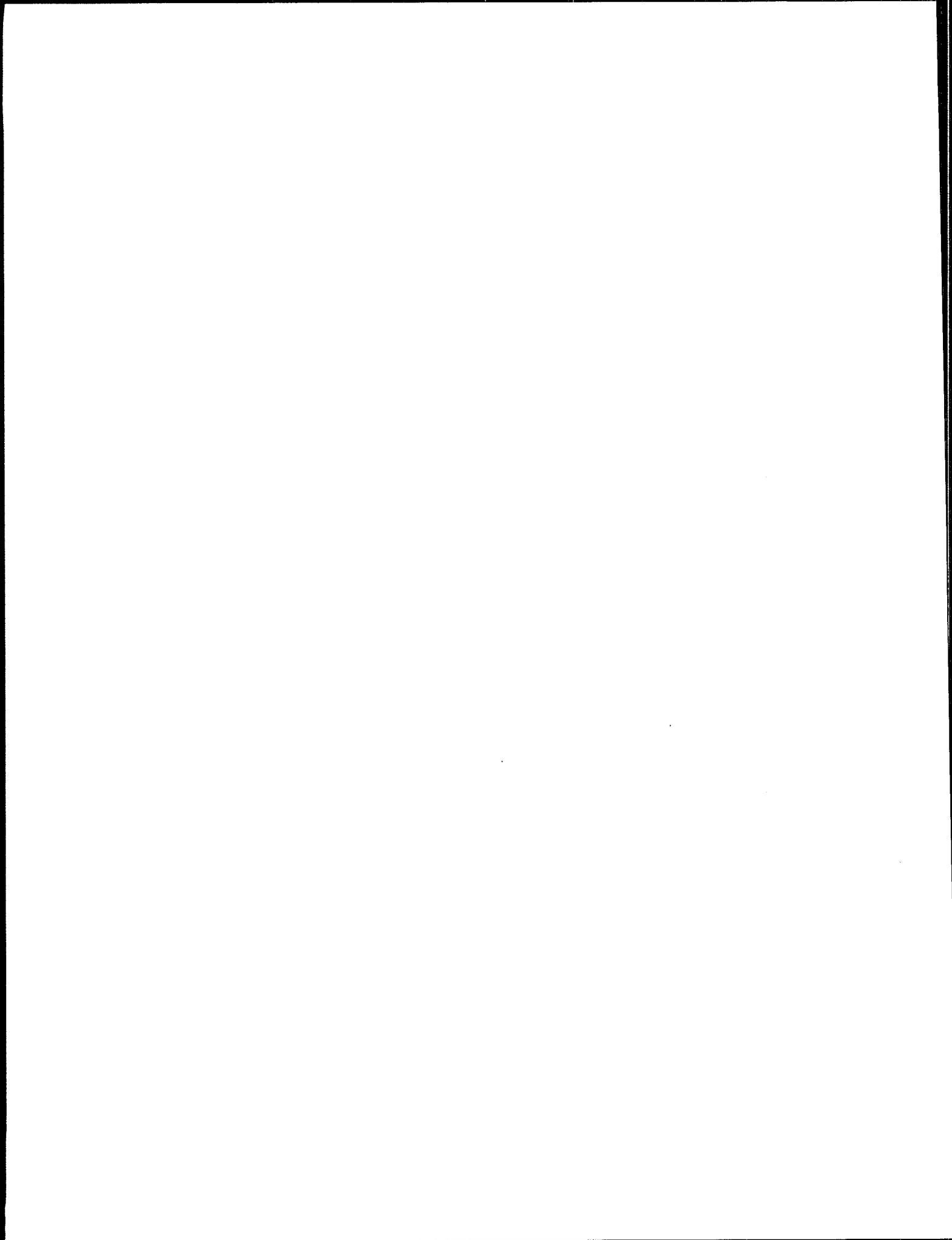
- *There are several financial ratios which indicate different aspects of a system's financial health. Ratios can be easily calculated from the wastewater system's accounting records. This section will go through the process step-by-step.*
- *By calculating ratios every month, you can build a financial trend. This trend will provide a quick assessment of past operations in a simple, easily understood manner. Ratios can be plotted on a graph to provide a visual display of financial health over time.*
- *Trends also allow you to project what will happen next month ... the next two months and so forth. They give an early warning signal of corrective actions that you should take ... like, raising revenues or cutting expenses.*
- *Ratios can be used to compare operations of one utility with another.*
- *If your utility combines the accounting for water and wastewater operations, you will need to segregate water revenues from wastewater revenues and water expenses from wastewater expenses before calculating ratios.*

*** Definitions**

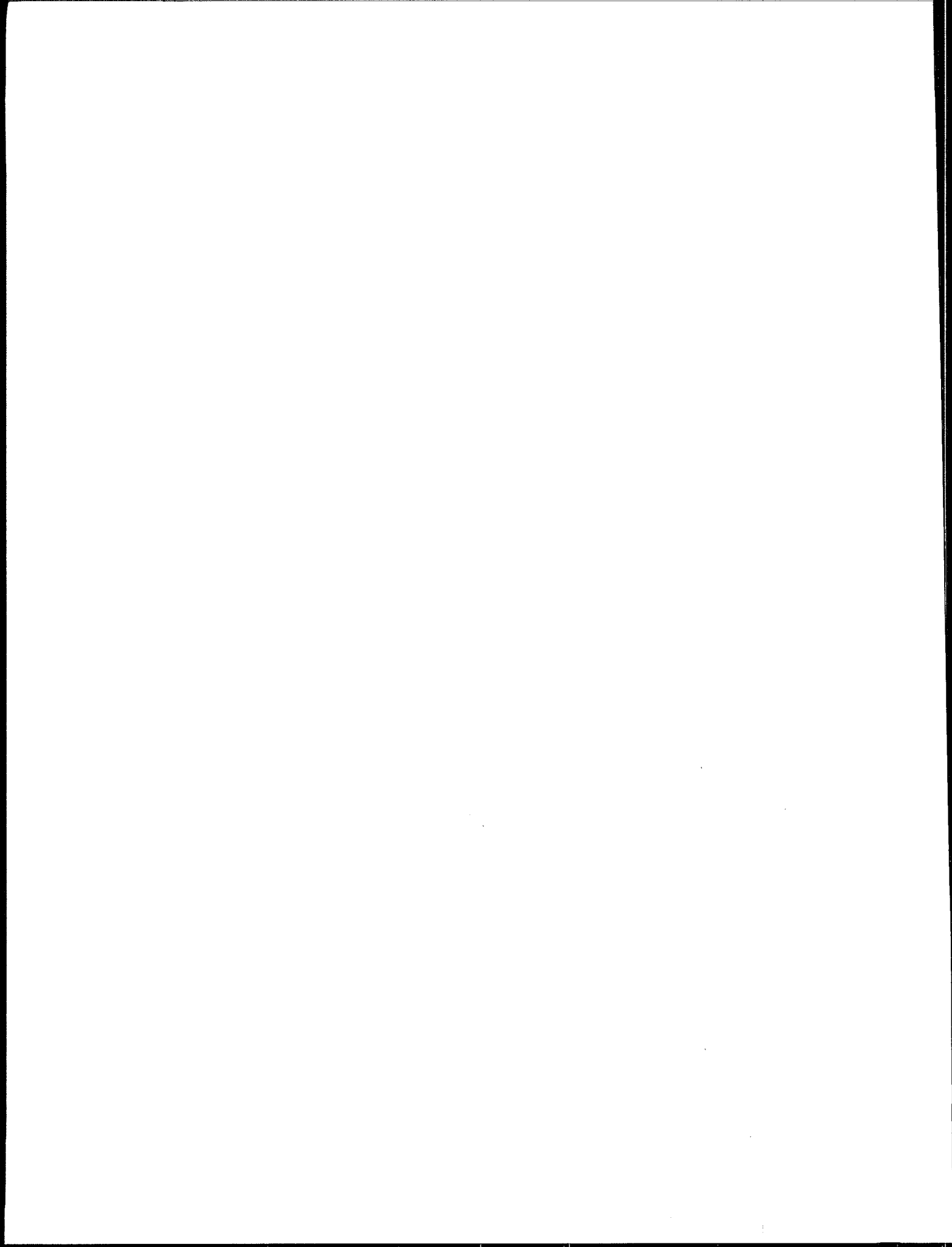
- *Before we begin calculating ratios, we will need to cover some basic financial terms. These terms show up on utility financial records.*
- *Use Overhead # 6*



- Revenue is system income primarily from user service charges. Operating revenues also come from special charges such as hookup and impact fees, interest income from investments, late payments, penalties and forfeited meter deposits. In some older systems, taxes and assessments are revenue sources.
- User Service Charge. The User Service Charge (USC) is the largest revenue source. It is the fee charged users for the collection and treatment of wastewater (or the treatment and distribution of water).
- Hookup/Impact Fees. Hookup fees are charges for new customers connecting to existing water and sewer lines. An impact fee is a charge, usually imposed on developers, to compensate the system for the impact of growth on the system's infrastructure.
- Taxes/Assessments. Taxes/assessments usually pertain to older water and wastewater systems that use property taxes or front footage assessments (or some other basis of assessment) as revenues.
- Interest Earnings. Interest income comes from investments like checking accounts, savings accounts and treasury bills.
- Other revenue sources may include sales from treatment by-products such as sludge compost, or the penalties charged for not paying the sewer bill on time.
- Use Overhead # 7



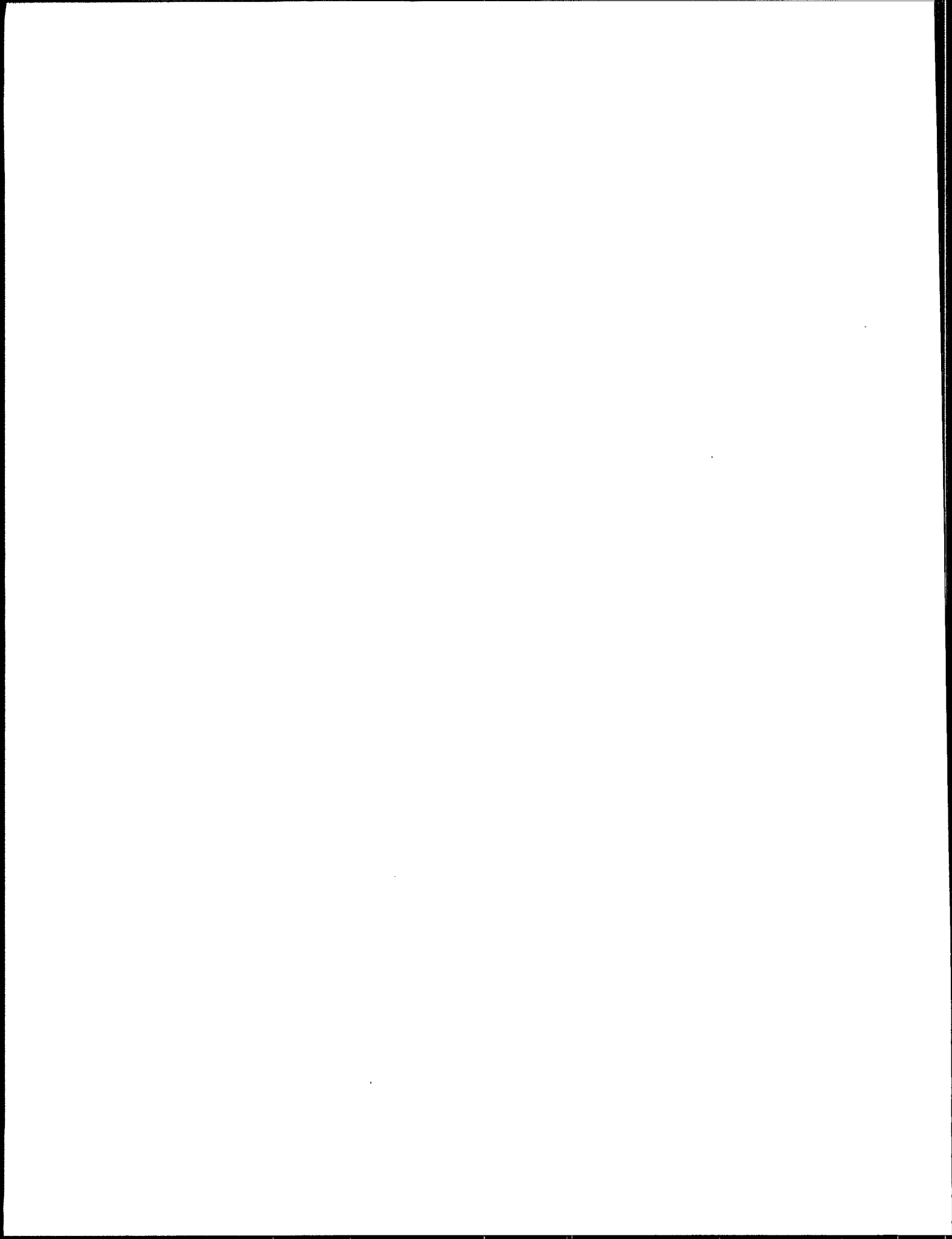
- Operating Expenses are the full cost of operating your system. They include salaries and benefits, administration costs, utility costs, chemicals, supplies, equipment replacement costs, and the principal and interest payments on debt.
- Salaries and Benefits are the largest costs for most operations. This includes wages and fringe benefits earned by employees... regular pay, overtime, sick and annual leave, health benefits, bonuses, longevity pay and so forth.
- Administration Costs are the costs associated with providing facilities for conducting business, liability insurance, postage and so forth.
- Utilities. These costs are for utilities associated with the operation ... such as water, electricity, gas and fuel oil. Electricity keeps pumps pumping. Gas may be used for heating or perhaps in burning sludge. Water is used throughout the plant.
- Chemical Costs include all chemicals necessary for the operation.
- Equipment Replacement Costs are the costs of obtaining and installing equipment or accessories necessary to maintain the capacity and performance for which the treatment facility was designed and constructed. Some equipment such as motors will wear out and must be replaced during the life of the treatment facility. This should not be confused with normal maintenance expenses. Annual contributions to a separate equipment replacement fund is an excellent financial management practice.



- Principal and Interest. The repayment of principal and associated interest on debt are considered an operating cost. This is also called debt service costs.
- Supplies and Parts include lab supplies, gaskets, belts, lubricants and so forth.
- Other. There may be other expenses such as contracts for equipment service, engineering services and so forth.
- A word about what operating expenses do not include. They do not include the cost of new capital facilities such as more treatment capacity or additional lines. They also exclude depreciation. Depreciation is an estimate of how much value the utility's plant and equipment lose in a given time period. Since municipal utility operations are generally not required to provide money to cover depreciation, it is not counted as an operating expense.

* **Operating Ratio**

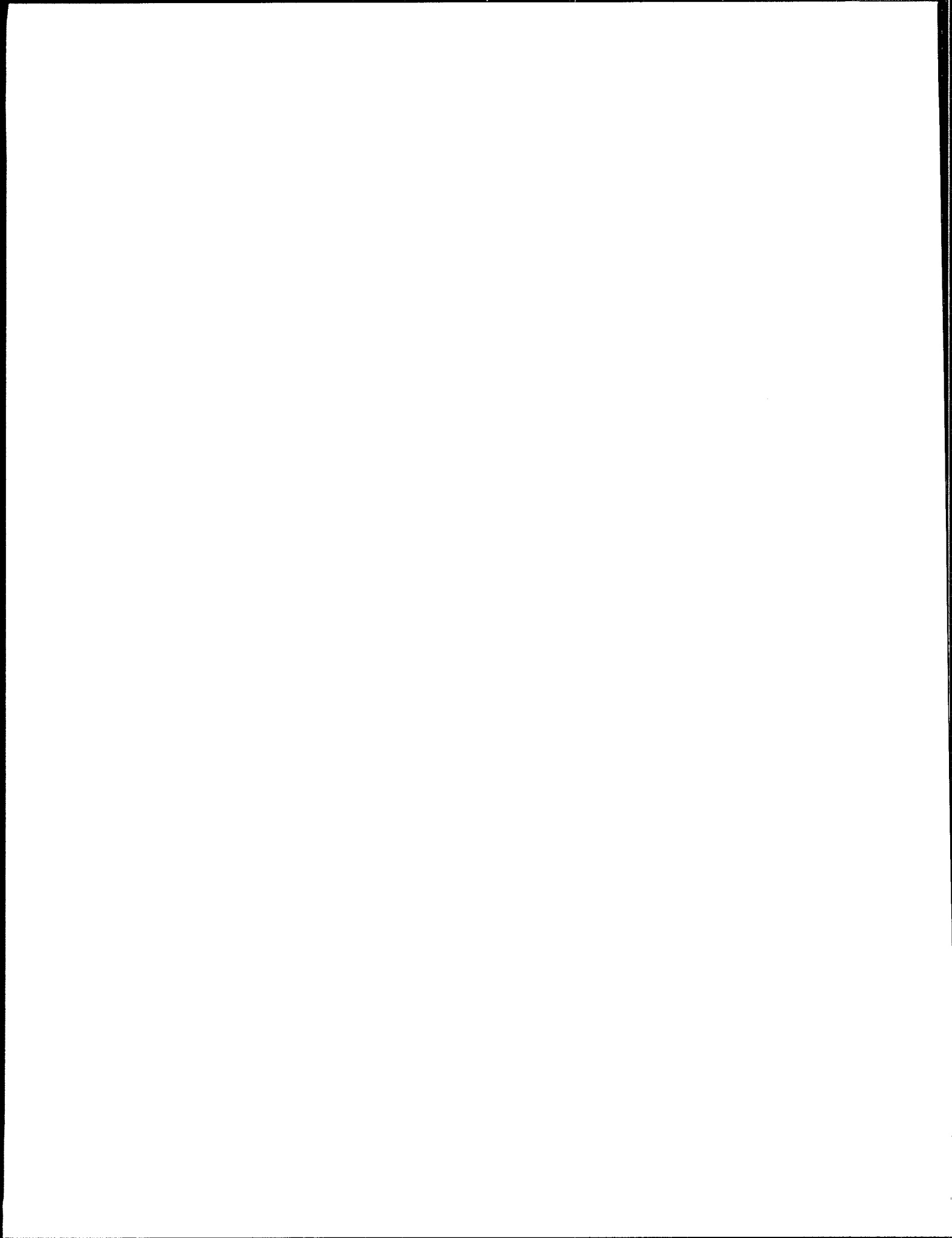
- Use Overhead # 8
- Now, we are ready to compute the operating ratio. Operating ratio is total revenues divided by total operating expenses.
- An operating ratio of 1.00 is the minimum acceptable for a self-supporting utility. Anything less than an operating ratio of 1.00 spells financial trouble.



- *The operating ratio must be greater than 1.00 if the utility has outstanding debt.*
- *Since monthly revenues and operating expenses vary widely, it's best to calculate the operating ratio on a year-to-date basis.*
- *Pay attention to the trend in operating ratios from year-to-year. A steady or upward trend in the operating ratio indicates good financial health. If the ratio trend is falling, you need to take action to get the utility back in good financial shape.*
- *Charting the operating ratio history gives a quick visual assessment of how you are doing.*
- *Use overhead # 9*

*** Coverage Ratio**

- *Coverage ratio measures whether the utility operation has enough revenue to pay its debt service (principal and interest) on its loans and bonds and still have enough money left to cover contingencies. Contingencies are unexpected problems. An example is a natural disaster.*
- *Lenders and bond agencies are particularly interested in the coverage ratio because it indicates whether money will be available to pay off debt service if the utility operation incurs unusual expenses.*
- *Use overhead # 10*



- *The coverage ratio is calculated by:*

- (1) *Totaling all revenues received during the year, from all sources.*
- (2) *Totaling all NON-DEBT expenses for the year. This is all operating expenses excluding principal and interest payments. Refer back to overhead # 7.*
- (3) *Subtracting all non-debt operating expenses from all revenues.*
- (4) *Divide the result by the yearly debt service expenses.*

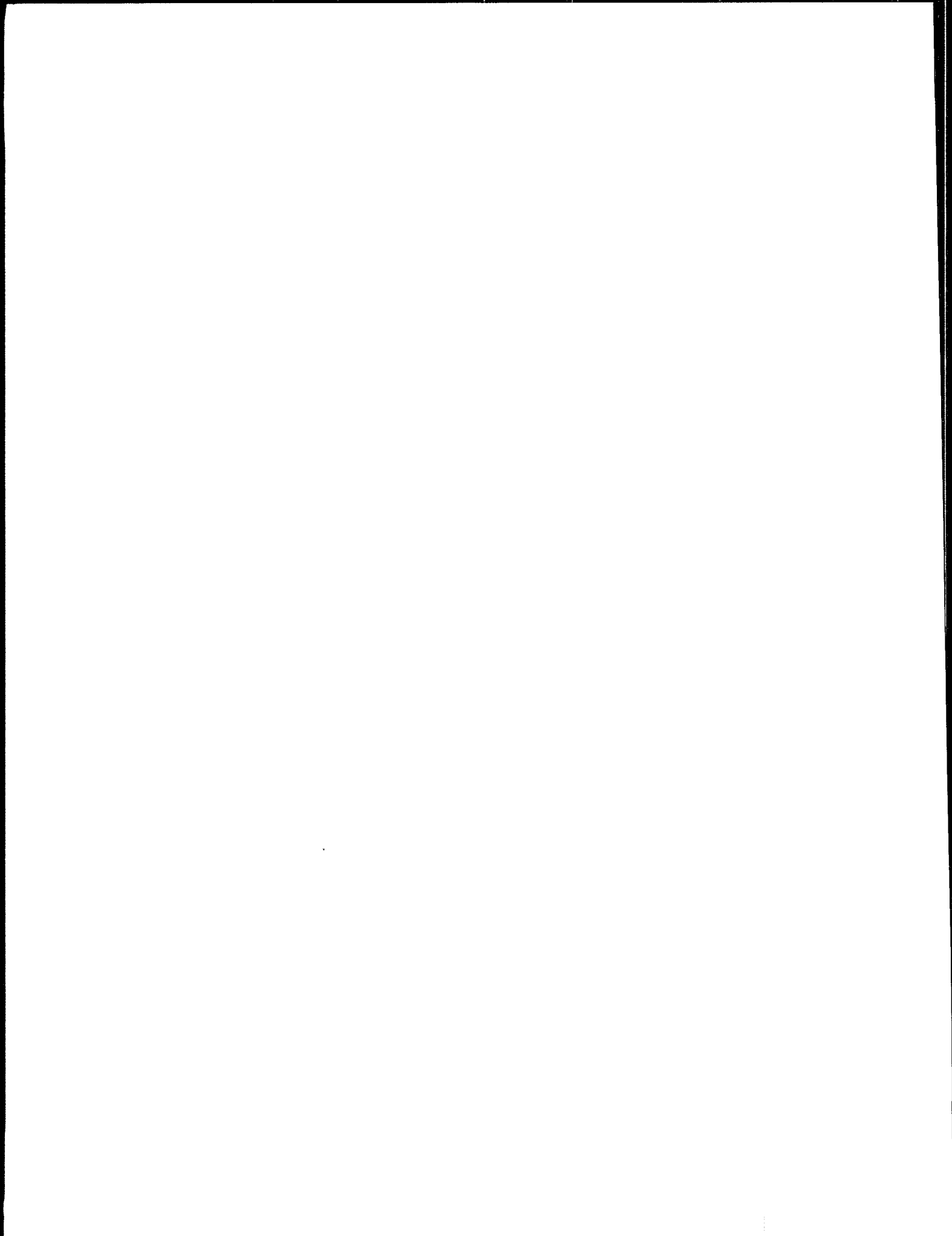
- *Although bond requirements differ, a coverage ratio of 1.25 is common. Our example has a high coverage ratio - 1.7. This can happen when a system deliberately builds reserves prior to embarking on a big building program to improve its infrastructure.*

- *Again, the coverage ratio, like the operating ratio, is usually computed at the end of the year. It can also be charted to provide a visual aid.*

- *If the coverage ratio drops below the minimum required by the bond or loan requirements, an increase in user charges is generally needed.*

* **Budget vs. Actual Comparisons**

- *Before we start on this section, let's review a couple of points. (1) If your utility offers both water and sewer service, develop separate budgets for each service. (2) At the beginning of the budget year (this may be calendar or fiscal), prepare SEPARATE revenue and expense budgets. We'll tell you more about budget preparation in a later section.*



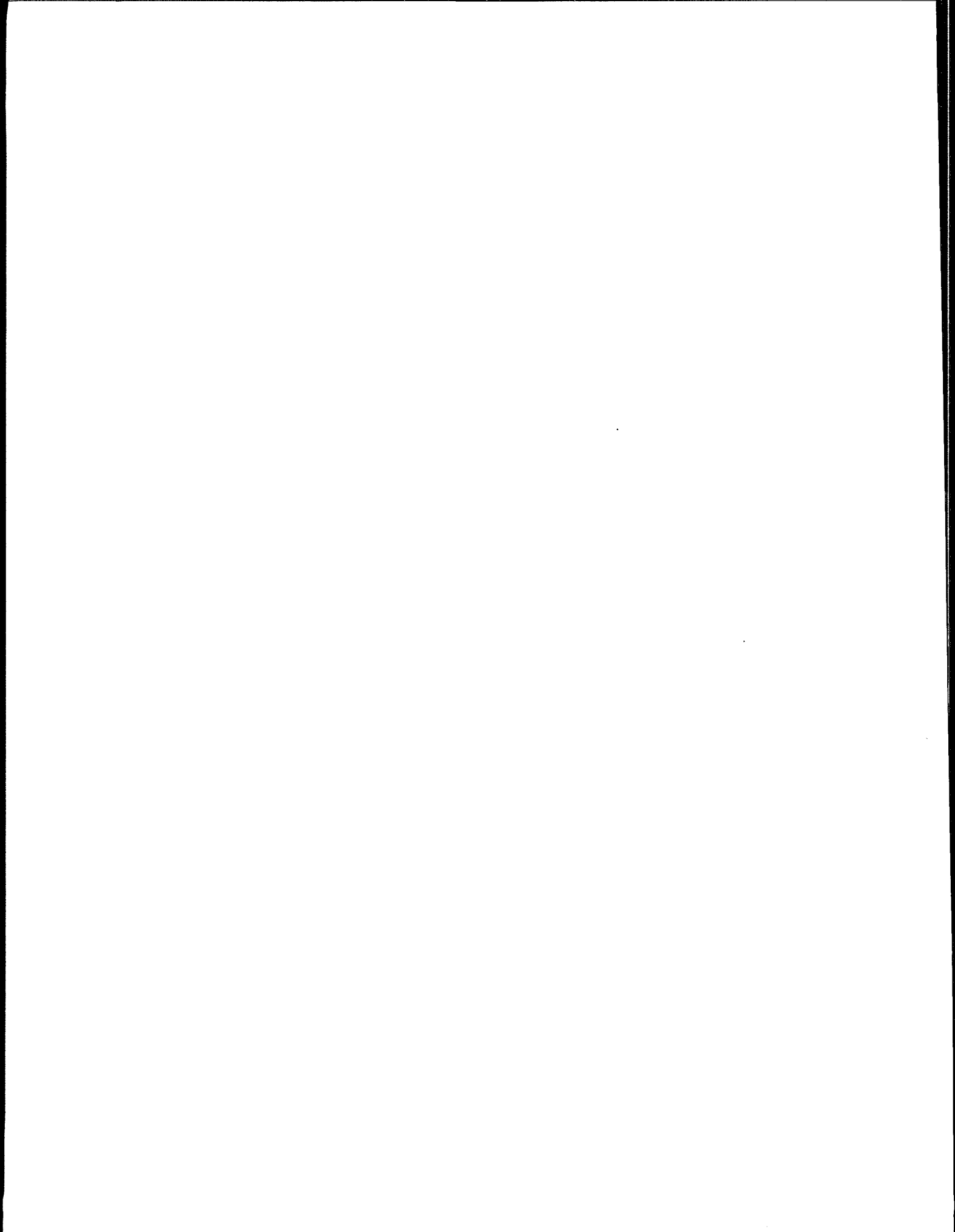
- *Budget vs. Actual comparison for revenues:*
- *The budget to actual comparison lets you see how your ACTUAL revenues and expenses compare to your BUDGETED revenues and expenses.*
- *We recommend this comparison be done monthly.*
- *Here's how you do it. Use overhead # 11.*
- *List the amount of revenue budgeted at the beginning of the year.*
- *Next, list the amount of revenue received to date.*
- *Then divide the actual revenue received by the total budgeted. Compare that to the percentage of the year completed.*
- *For example, at the end of September we have these results:*

Total Revenue Budgeted for year = \$1,790,000

Total Revenue received through Sept. = \$424,000

$$\$424,000 / \$1,790,000 \times 100\% = 23.7\%$$

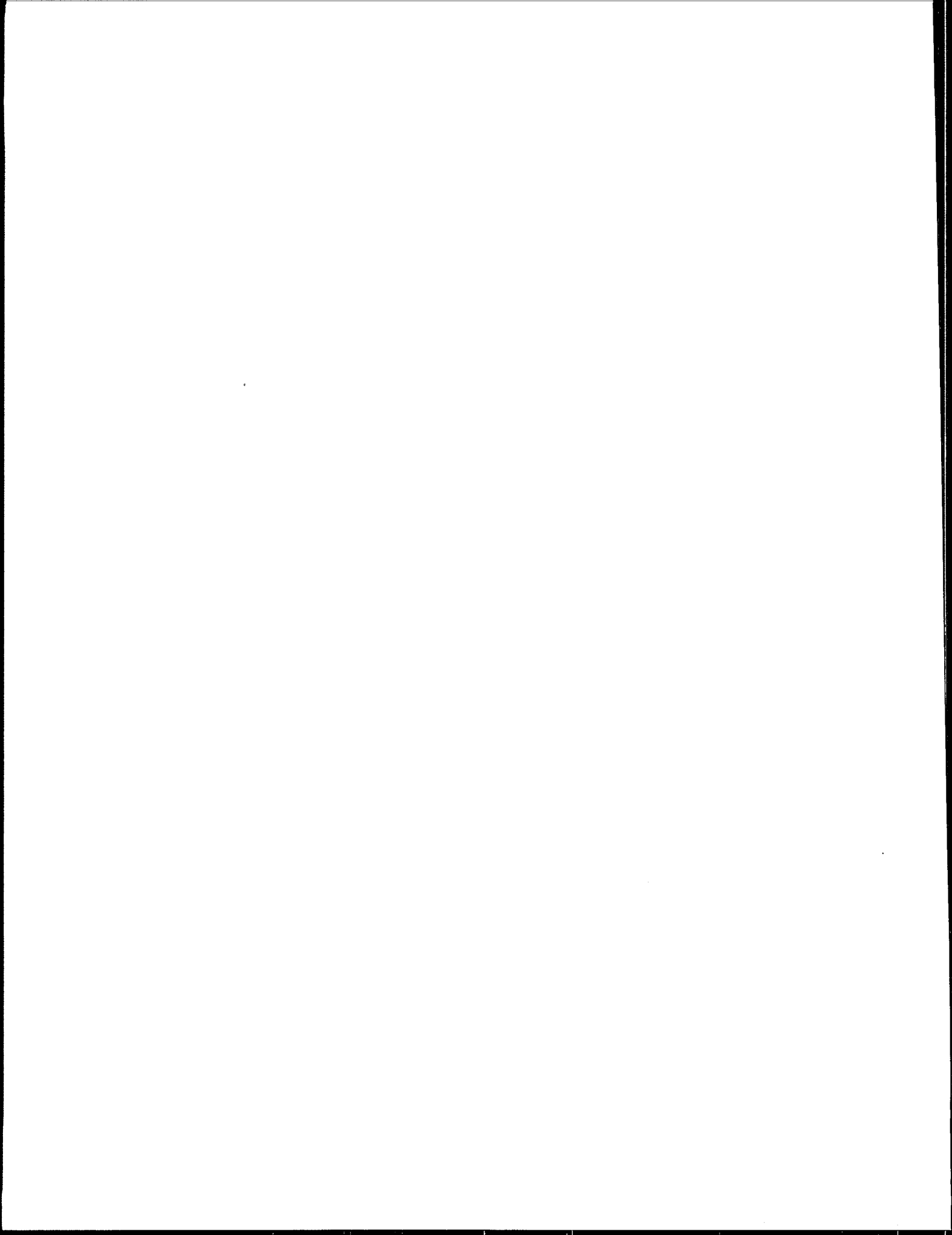
Three months (July - September) or 25% of the budget year has passed and you've collected only 23.7% of the revenues. This could be a sign that your ACTUAL revenue will not match the BUDGETED revenue for the year. There could be some reason why revenue for that particular quarter is off. One cause may be due to timing. Billing usually lags use by at least one month.



- *Also, you'll want to look at the individual revenue items to find out which ones are low and why.*
- *It is also helpful to compare the percent of budget received this period to the percentage of revenue received last year at this same time.*
- *If it seems that slow revenues will continue, then you will need corrective action.*
- *Budget vs. Actual comparison for expenses:*
- *A budget vs. actual test for expenses is similar to the one we conducted for revenues.*
- *Use overhead # 12*
- *Here our total budgeted operating expenses for the year is \$1,475,000. Actual operating expenses at the end of the first quarter are \$375,500.*
- *Calculate the % of budget expenses year to date:*

$$\$ 375,500 / \$1,475,000 \times 100\% = 25.5\%$$

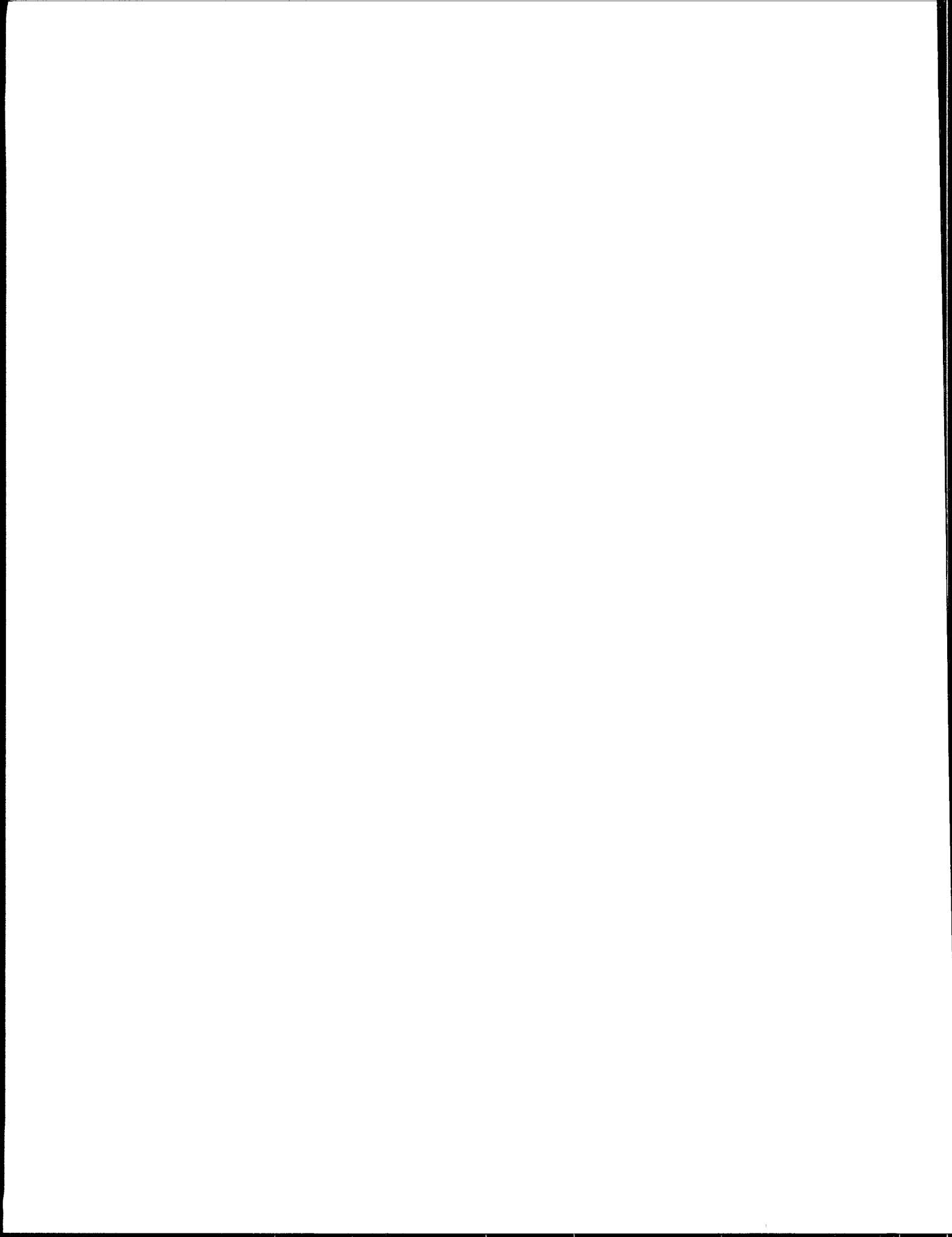
We are running slightly higher than expenses budgeted at this point. There may be some good reasons for this.
- *It's a good idea to compare the percentage spent with the percentage from the same time last year and to investigate individual items that are headed over budget.*



- *It is important that revenues and expenses work together. Look at both budgets. In the case above, actual revenues are lower than actual expenses, so we may be headed for trouble.*
- *Again, it is important to track budget vs. actual revenues and expenses monthly.*

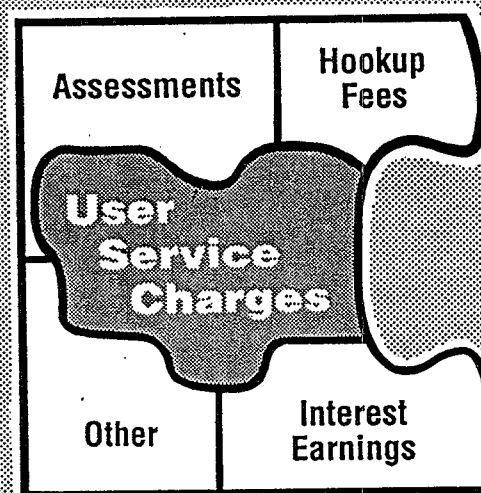
* **Capital Investment Ratio**

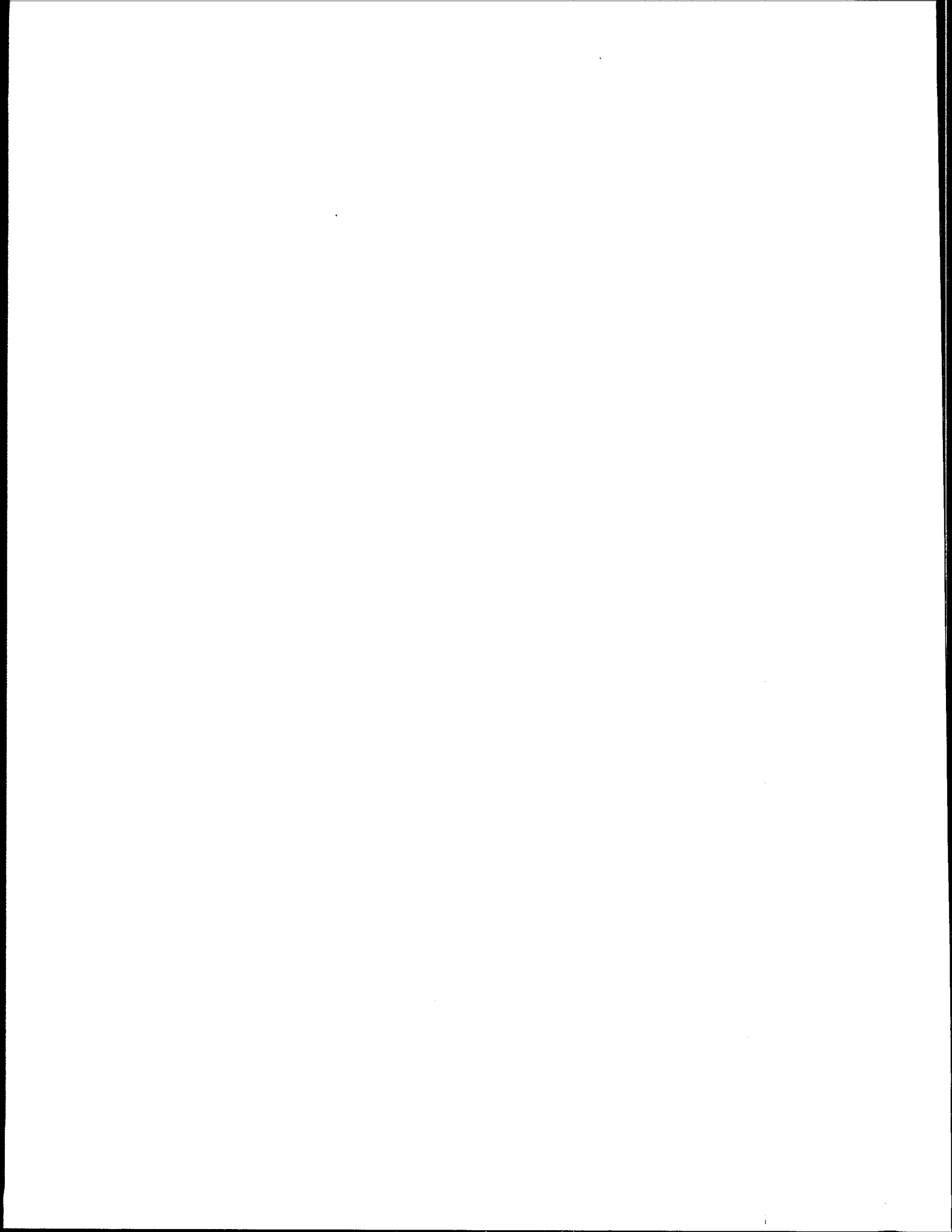
- *Take care of your utility investment by having a healthy capital investment ratio.*
- *The capital investment ratio is a measure of how many resources the utility is putting toward improving and replacing capital assets.*
- *Capital items are components of the utility that have a long life and a substantial cost. Examples are buildings, water and sewer lines, treatment plants, major equipment and vehicles.*
- *Use overhead # 13*
- *Calculate the capital investment ratio at the end of the year by: Totaling all money spent on capital assets and dividing by the total revenues.*
- *We cannot give rules or guidelines for the capital investment ratio. It can be low for a utility with new facilities; high for ones with older facilities.*
- *It's best to judge what your capital investment ratio should be by comparing it to earlier years.*



Revenues...

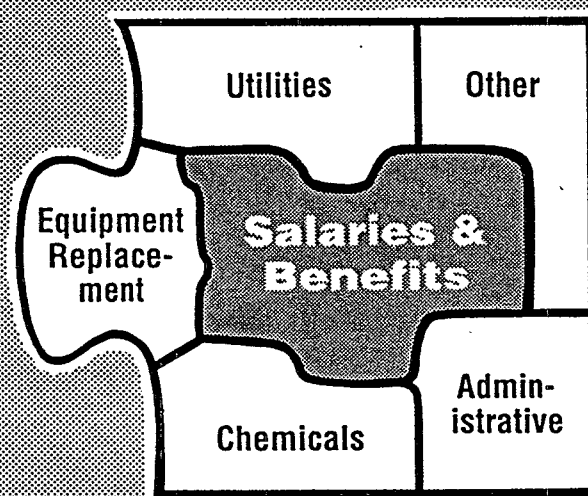
...are all monies received for wastewater operations. Get these figures from management, budgets and financial statements.

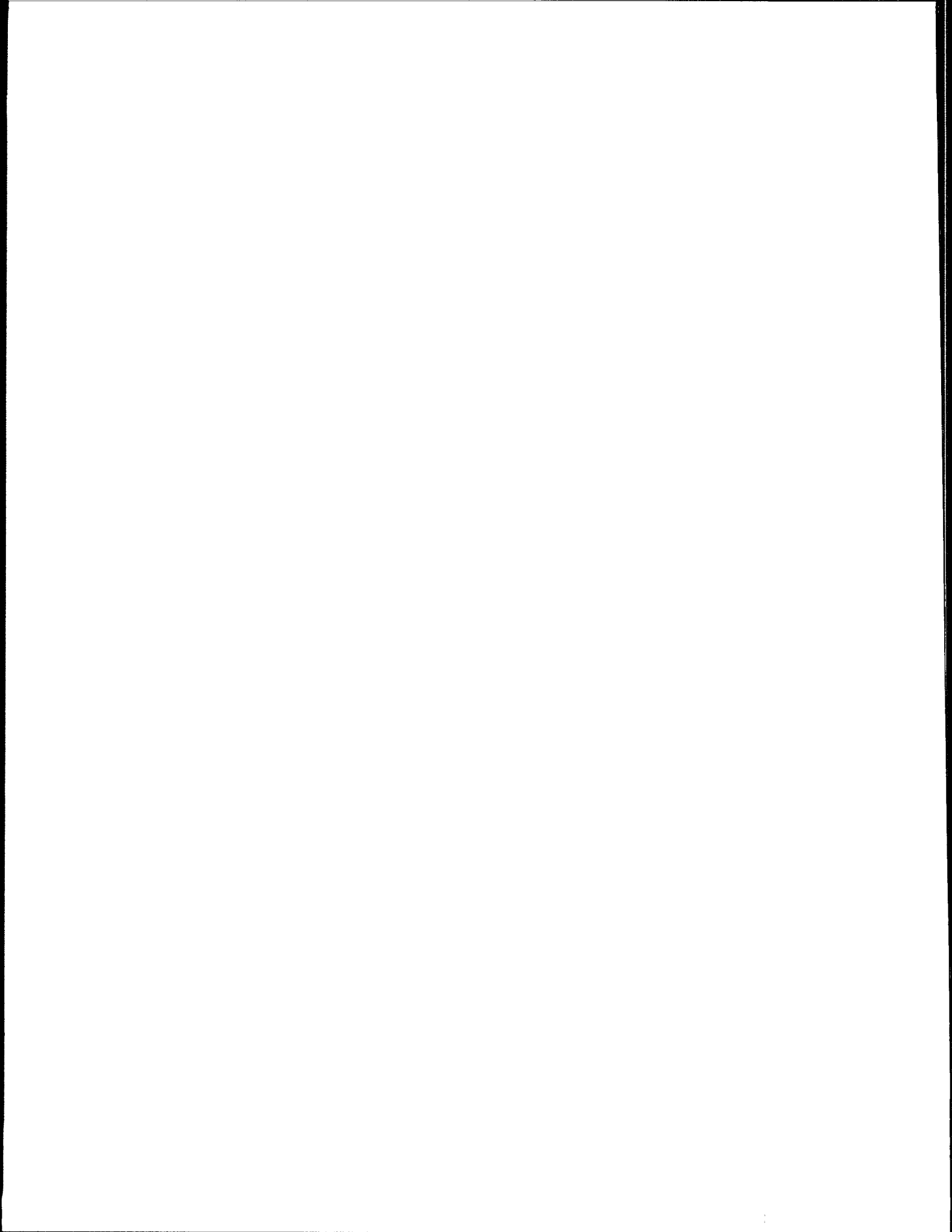




Expenses...

...are the costs of operating, maintaining, replacing equipment and paying debt service for a wastewater system.





OPERATING RATIO WORKSHEET

(Year to Date)

TOTAL REVENUE

User service charges	\$ <u>1,700,000</u>
Hook-up/Impact Fees	<u>25,000</u>
Taxes/Assessments	<u>10,000</u>
Interest Earnings	<u>50,000</u>
Other Revenue	<u>5,000</u>
Total Revenue	\$ <u>1,790,000</u>

TOTAL OPERATING EXPENSES

Administration	\$ <u>125,000</u>
Wages	<u>375,000</u>
Benefits	<u>75,000</u>
Electricity	<u>150,000</u>
Chemicals	<u>30,000</u>
Fuel & Utilities	<u>25,000</u>
Parts	<u>20,000</u>
Equipment Replacement Fund	<u>200,000</u>
Principal and Interest Payments	<u>450,000</u>
Other	<u>25,000</u>
Total Operating Expenses	\$ <u>1,475,000</u>

OPERATING RATIO

Total Revenue

\$ 1,790,000

Total Operating Expenses

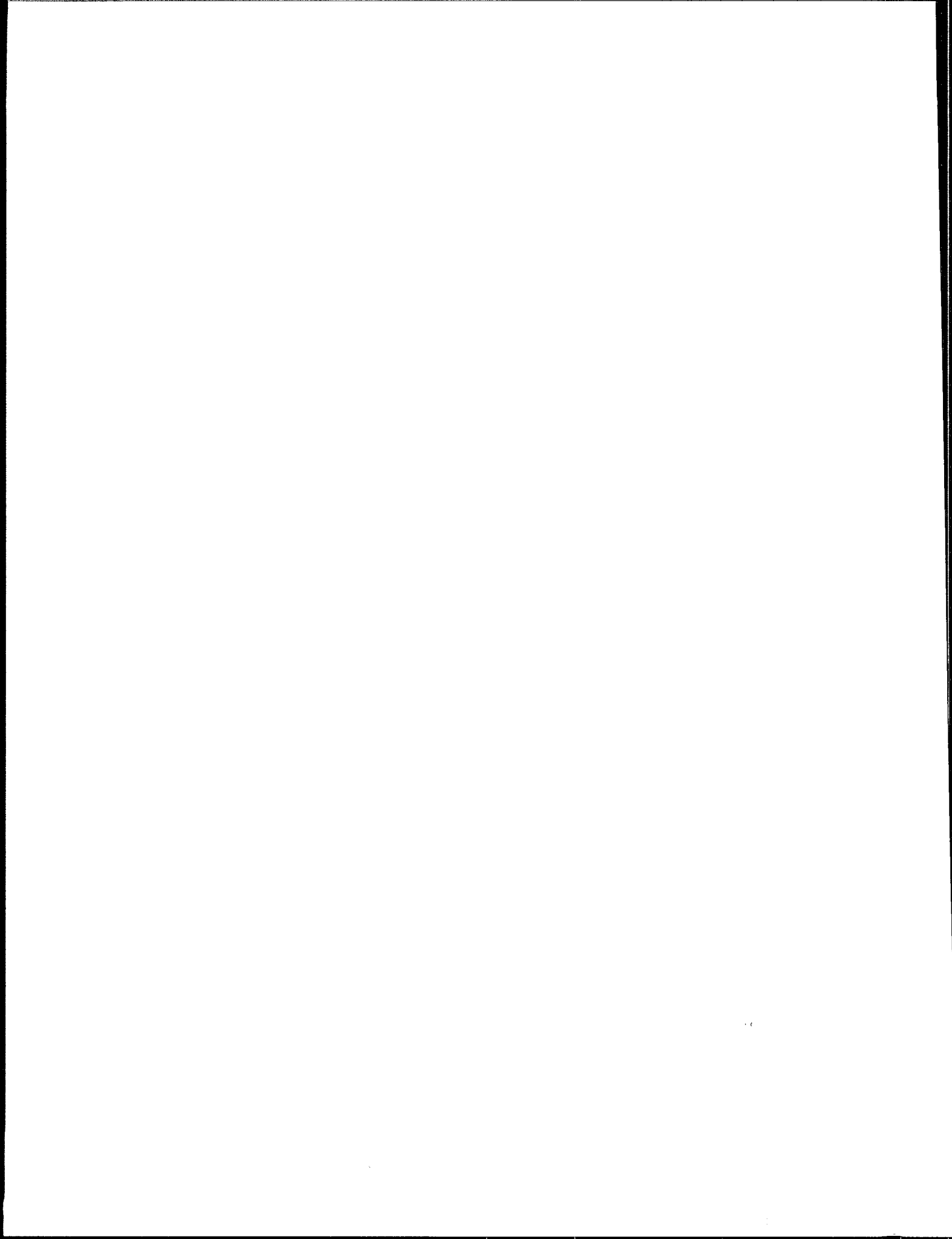
divided by

\$ 1,475,000

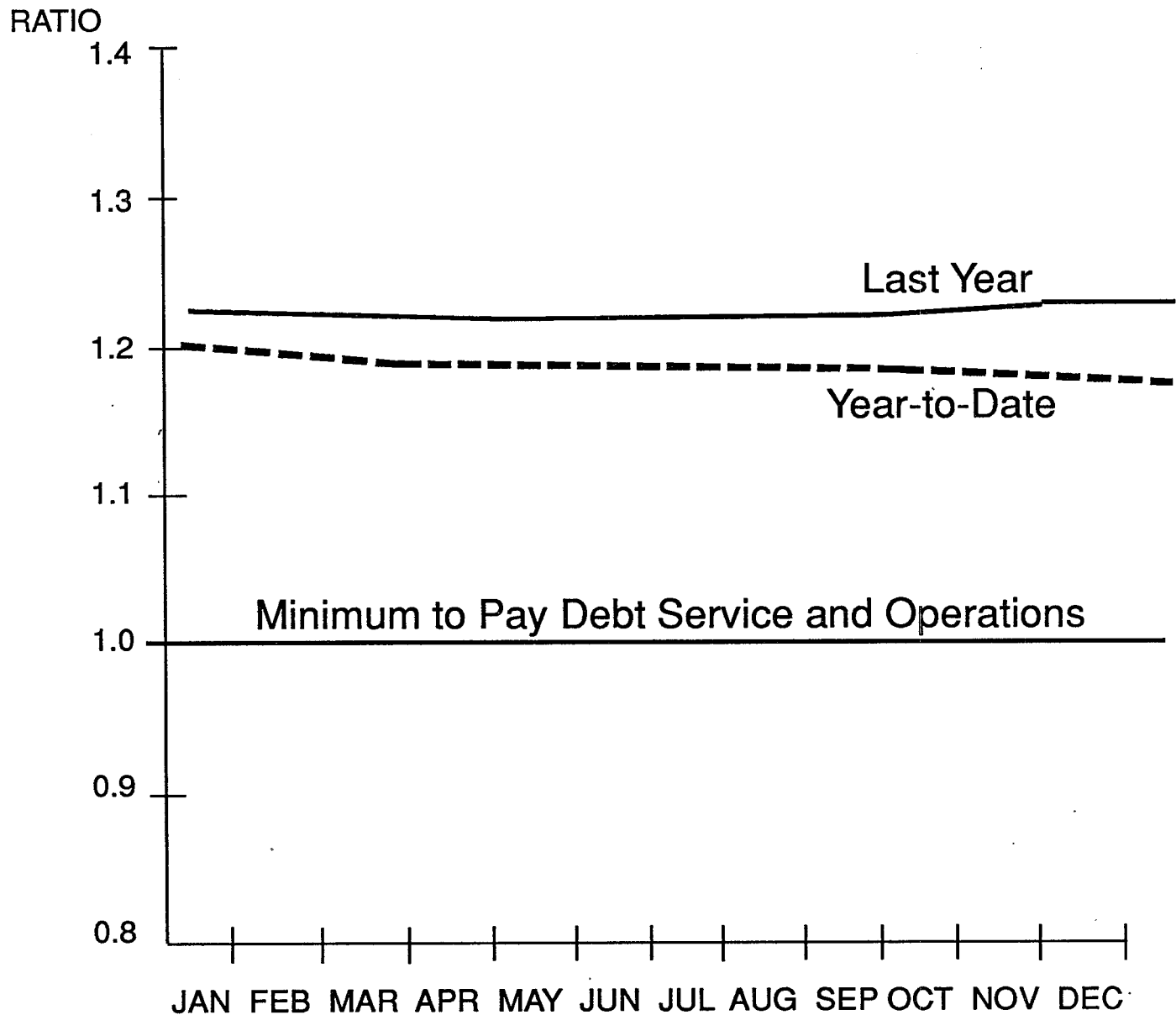
Operating Ratio

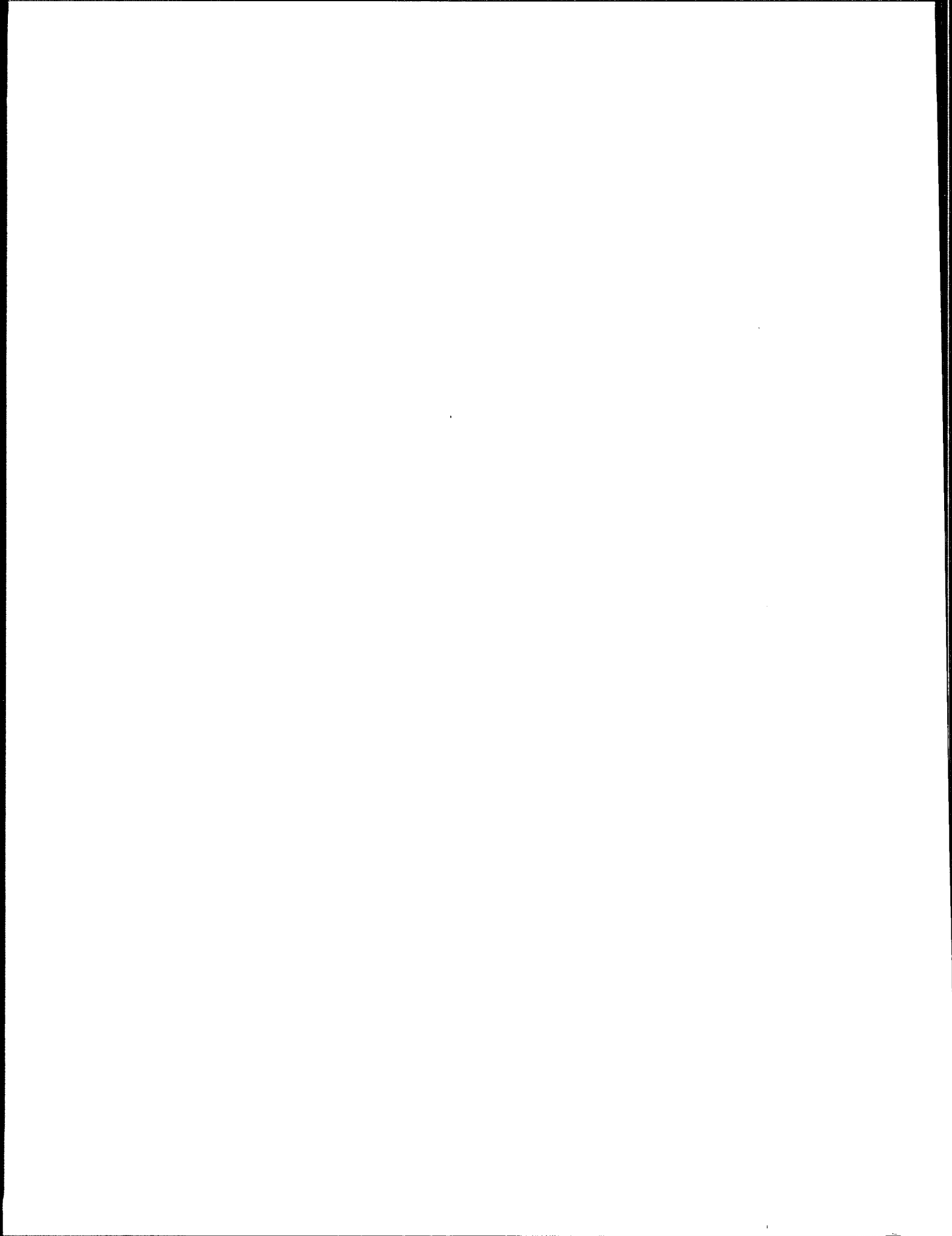
equals

1.21



OPERATING RATIO HISTORY





COVERAGE RATIO WORKSHEET

Total Revenue \$ 1,790,000

minus

Non-Debt Expenses \$ 1,025,000

equals

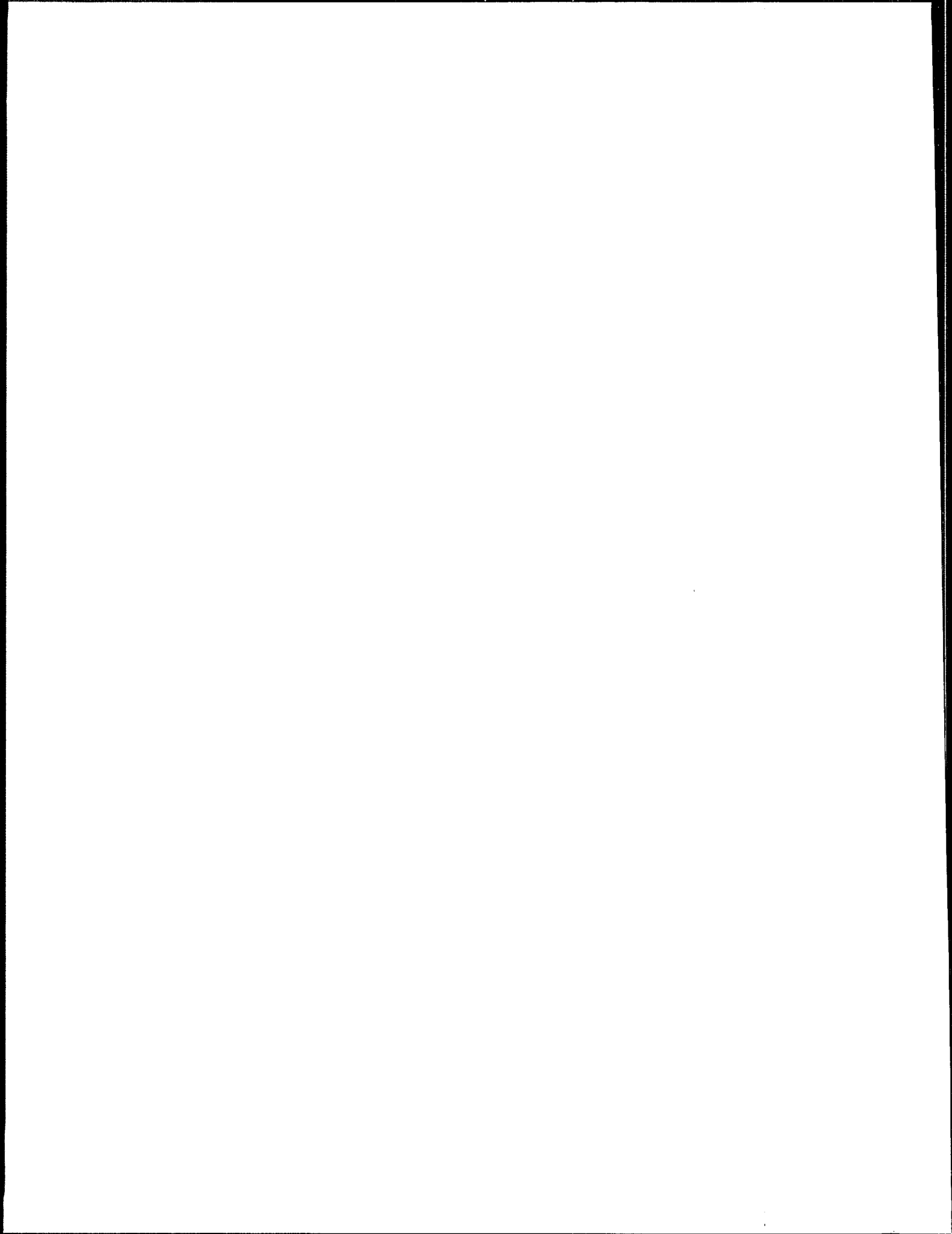
Revenue Available
for Debt Service \$ 765,000

divided by

Debt Service Expenses \$ 450,000

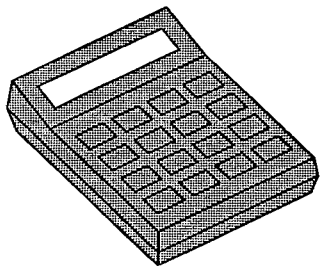
equals

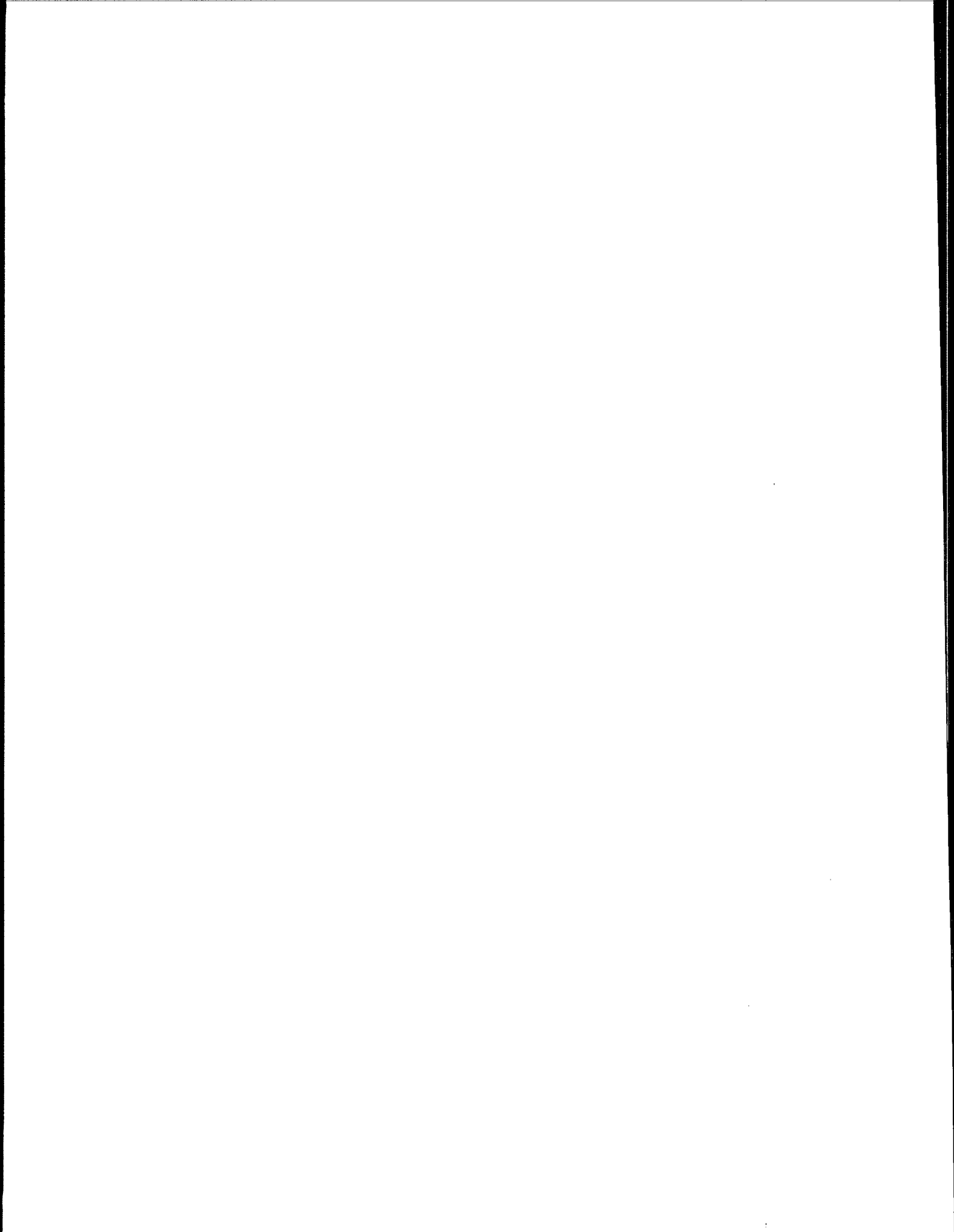
Coverage Ratio 1.7



Revenue Budget vs. Actual

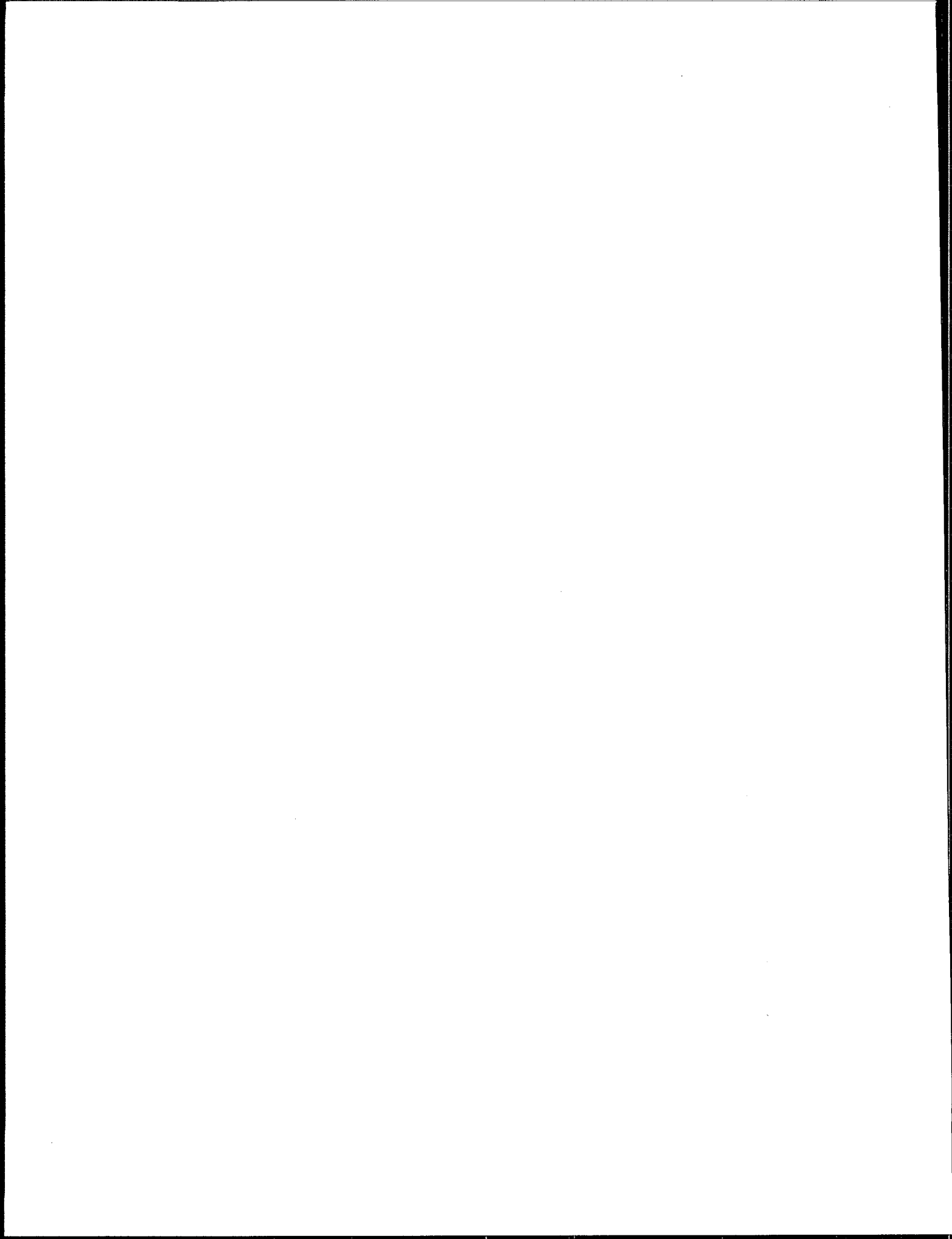
% of Year Completed to Date: <u>25 %</u>	\$ Budget Total	\$ Received Current Year To Date	% of Budget Received Current Year To Date	% of Budget Received Last Year To Date
User Charges	1,700,000	400,000	22.3	24.6
Taxes/ Assessments	10,000	5,000	50.0	20.4
Hook-up Fees	15,000	3,000	33.3	28.0
Impact Fees	10,000	5,000	50.0	42.5
Interest	50,000	10,000	20.0	35.7
Other Revenue	5,000	1,000	20.0	25.0
Total Revenue	1,790,000	424,000	23.7	26.4





Expense Budget vs. Actual

% of Year Completed to Date: <u>25 %</u>	\$ Budget Total	\$ Spent Current Year To Date	% of Budget Spent Current Year To Date	% of Budget Spent Last Year To Date
Administration	125,000	35,000	28.0	30.0
Wages	375,000	100,000	26.7	28.6
Benefits	75,000	20,000	26.7	25.1
Electricity	150,000	40,000	26.7	29.0
Chemicals	30,000	5,000	16.7	20.0
Fuel & Utilities	25,000	5,000	20.0	20.0
Parts	20,000	3,000	15.0	17.0
Equipment Replacement Fund	200,000	50,000	25.0	25.0
Principal & Interest Payments	450,000	112,500	25.0	25.0
Other	25,000	5,000	20.0	15.5
Total Operating Expenses	1,475,000	375,500	25.5	26.7



CAPITAL INVESTMENT RATIO WORKSHEET

TOTAL CAPITAL OUTLAYS \$ 125,000

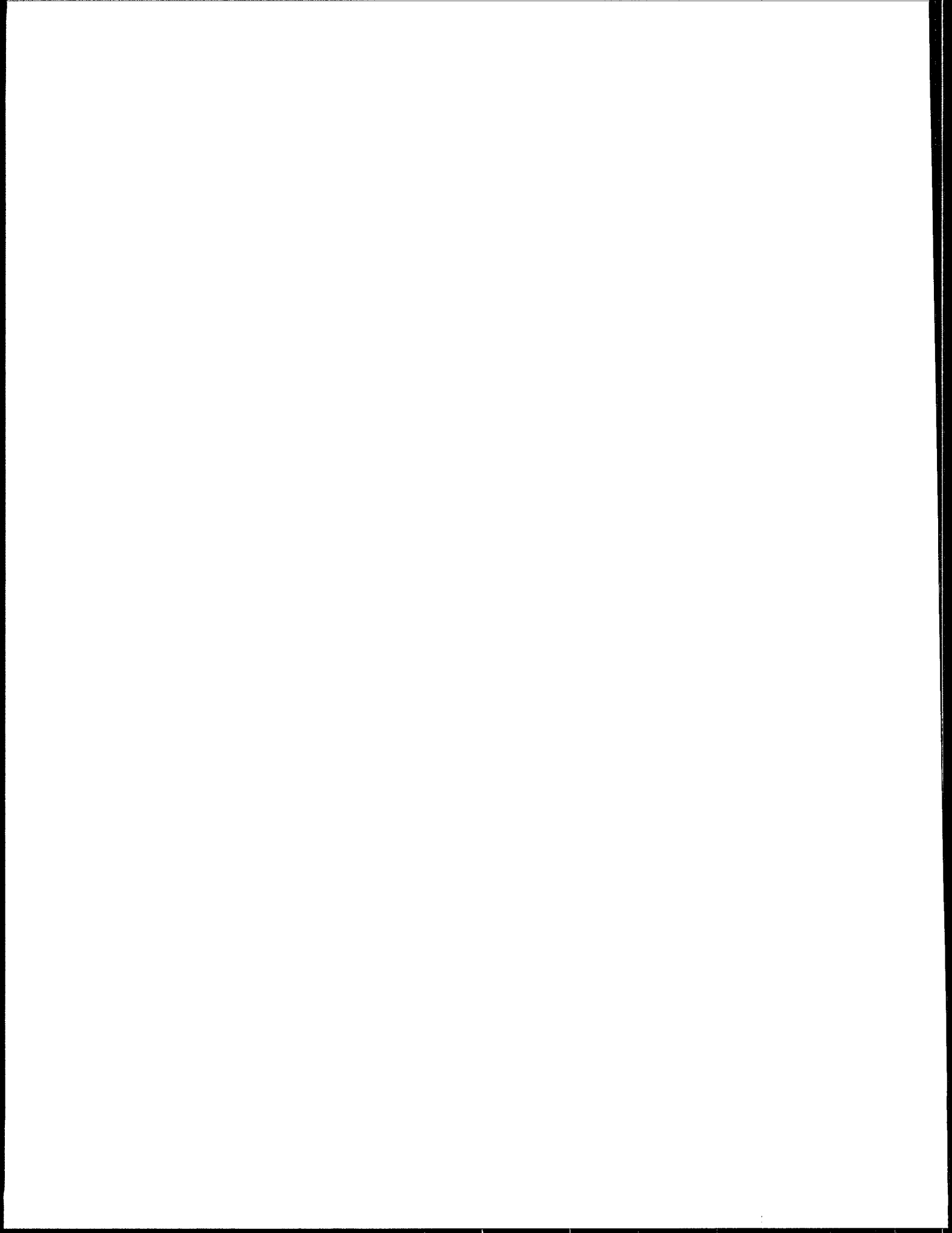
divided by

TOTAL REVENUE \$ 1,790,000

equals

CAPITAL
INVESTMENT
RATIO

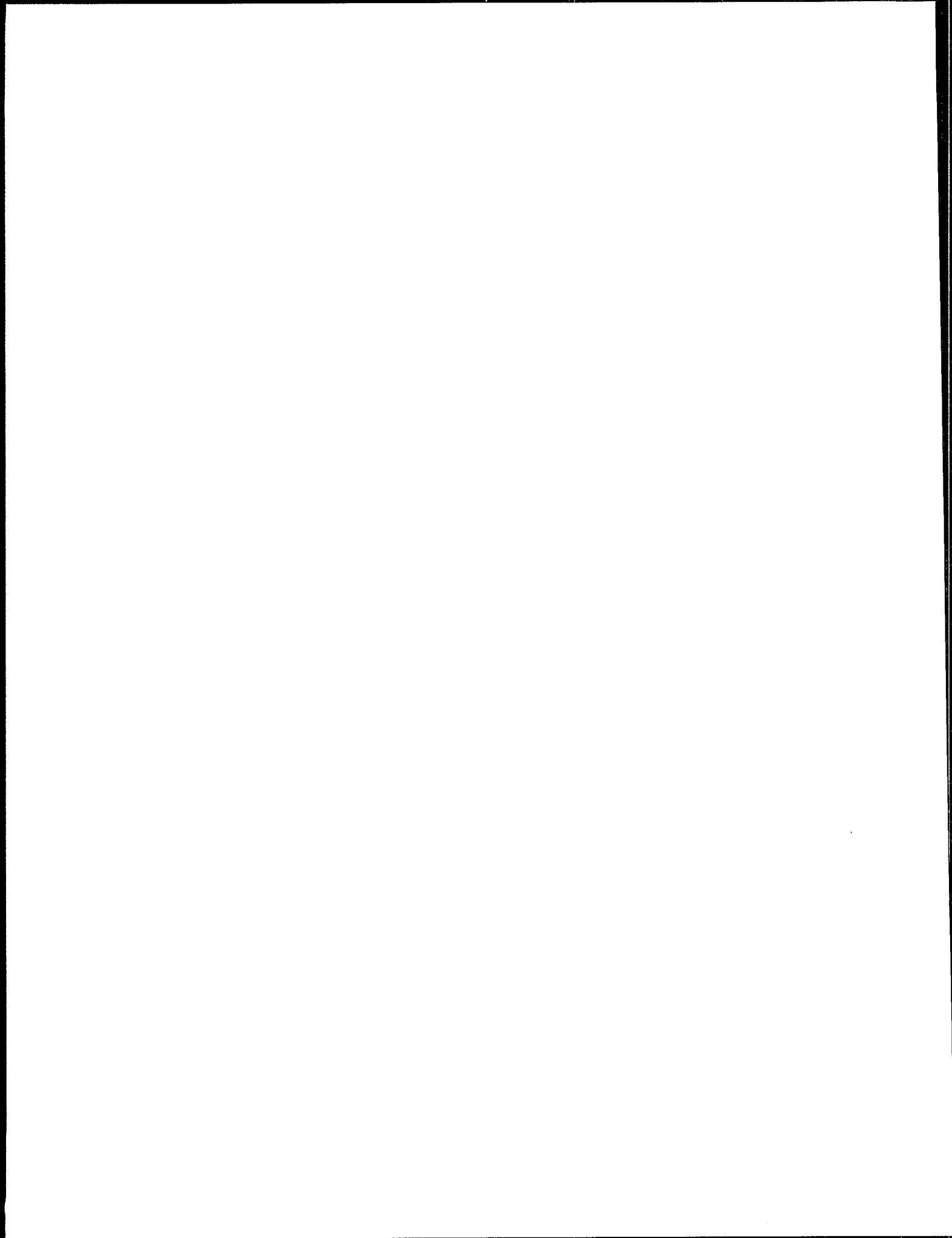
0.07



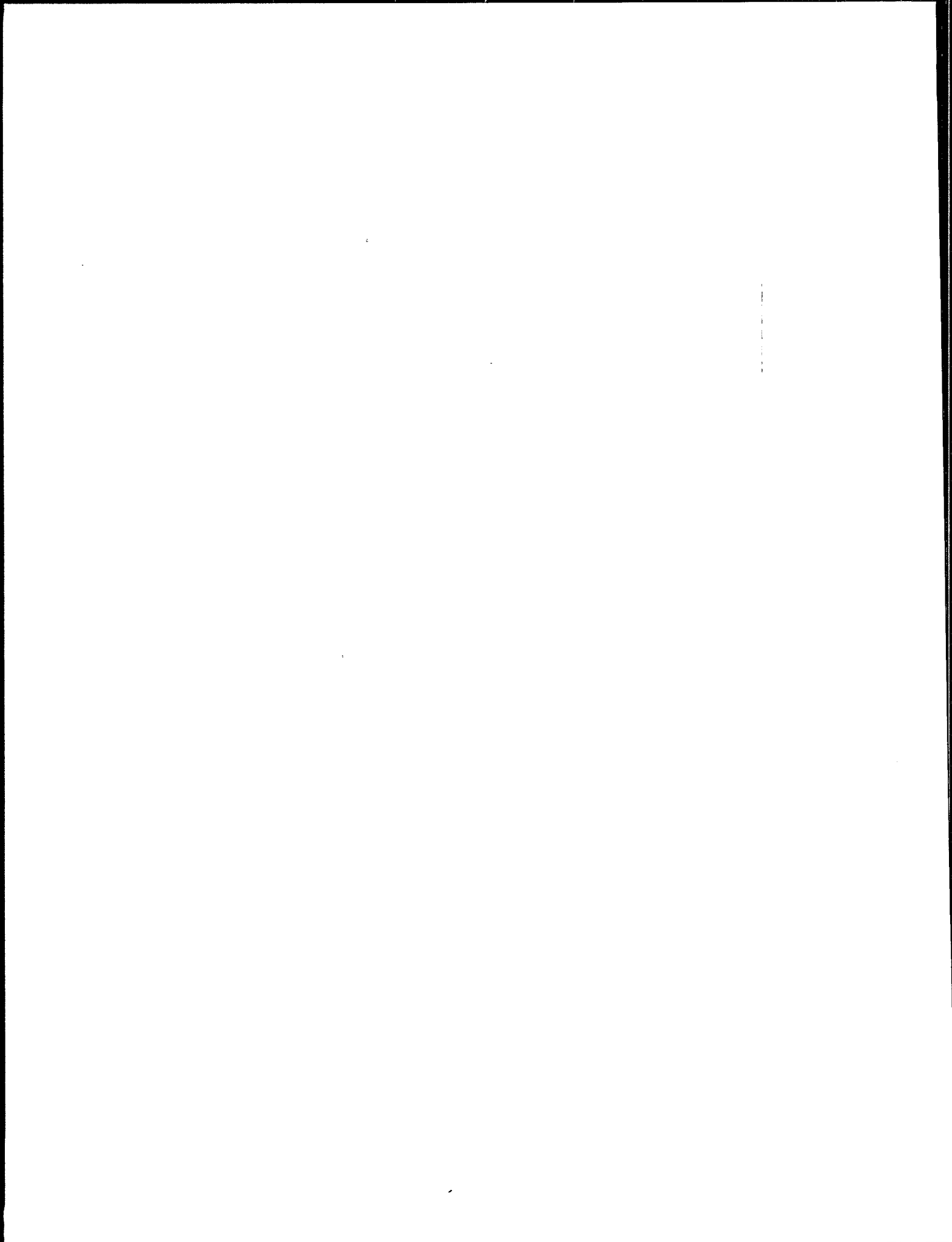
III.B. IMPROVE FINANCIAL HEALTH

* Financial Reporting

- *Financial reports are a must! Without them, the manager cannot know how revenue is coming in and how many expenses are being paid out.*
- *The financial reports need to be accurate and timely. By the 10th of the month, you should have adequate financial information to gage the financial health of the previous month.*
- *Here's a financial reporting checklist. Overhead # 14*
- *First, ask whether water and wastewater operations are accounted in a separate enterprise fund.*
- *We've already said that water and wastewater operations need to be accounted separately. But, what's an enterprise fund?*
- *To operate as an enterprise fund means that the water or wastewater utility is operated in a manner similar to private business enterprises. The intent is that the costs of providing the service is recovered primarily through user service charges. Another way to think about it - enterprise funds are self-supporting - the user pays.*

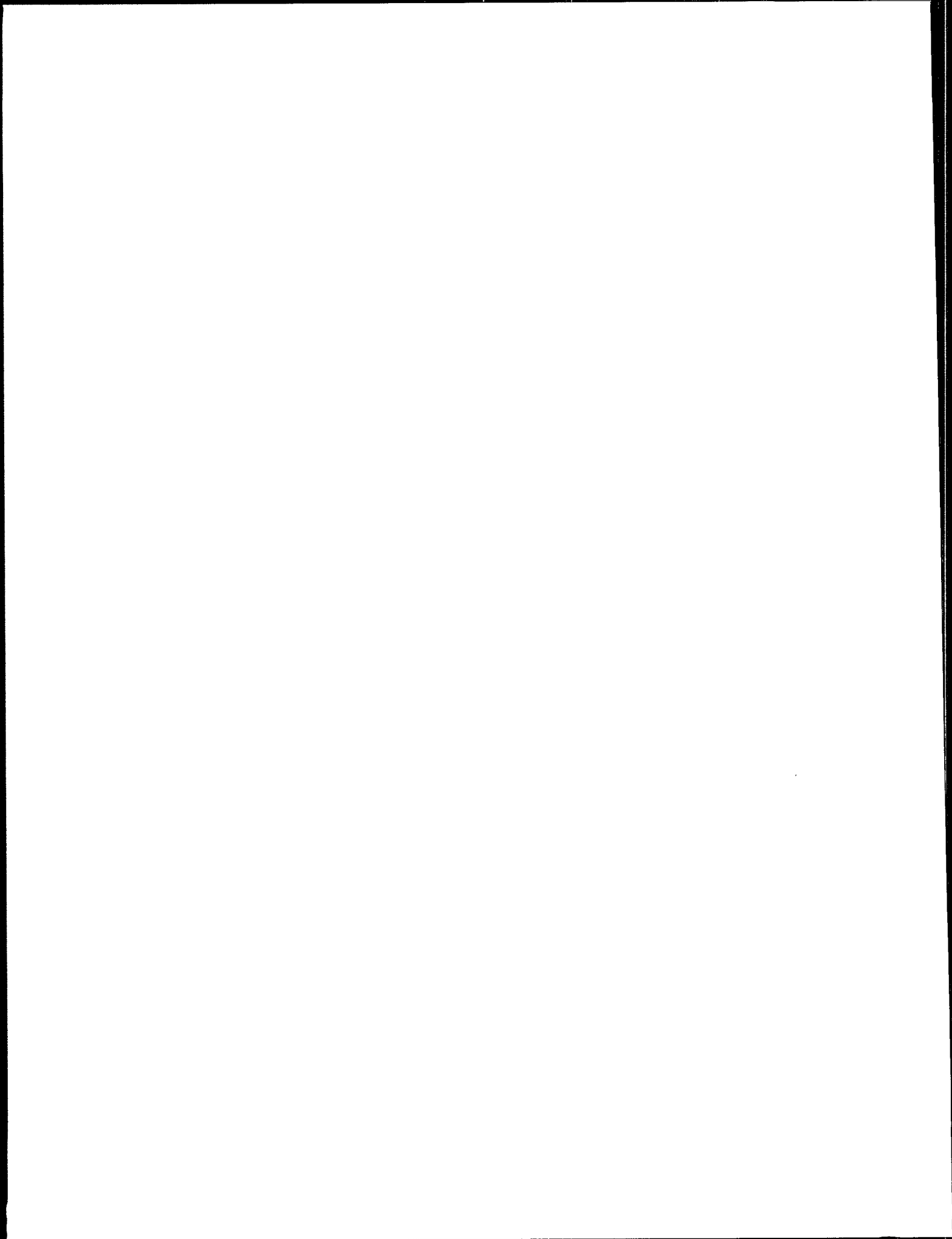


- *Enterprise-type funds are accounted for on an accrual basis. Under accrual basis accounting, revenues are recorded when they are earned (whether or not cash is received at that time) and expenses are recorded when goods and services are received or incurred (whether cash disbursements are made at that time or not).*
- *The utility revenue and expense reports may be in the form of a hand-entered ledger like this:*
- *Use overhead # 15*
- *Or in the form of computer printouts like these:*
- *Use overhead # 16*
- *Let's go back to the previous overhead. Overhead # 14.*
- *Good financial reports show both budget and actual figures. Refer to overhead # 11.*
- *Reports should be up-to-date for the previous month by the 10th of the following month, and records should be kept for at least 4 years.*
- *Accuracy in reporting is very important. That's why it is important to have yearly audits performed by a CPA.*
- *Certified Public Accountants (CPAs) audit in a form which conforms with Generally Accepted Accounting Principles (GAAP). We have used a simplified approach here.*



* **Purchasing**

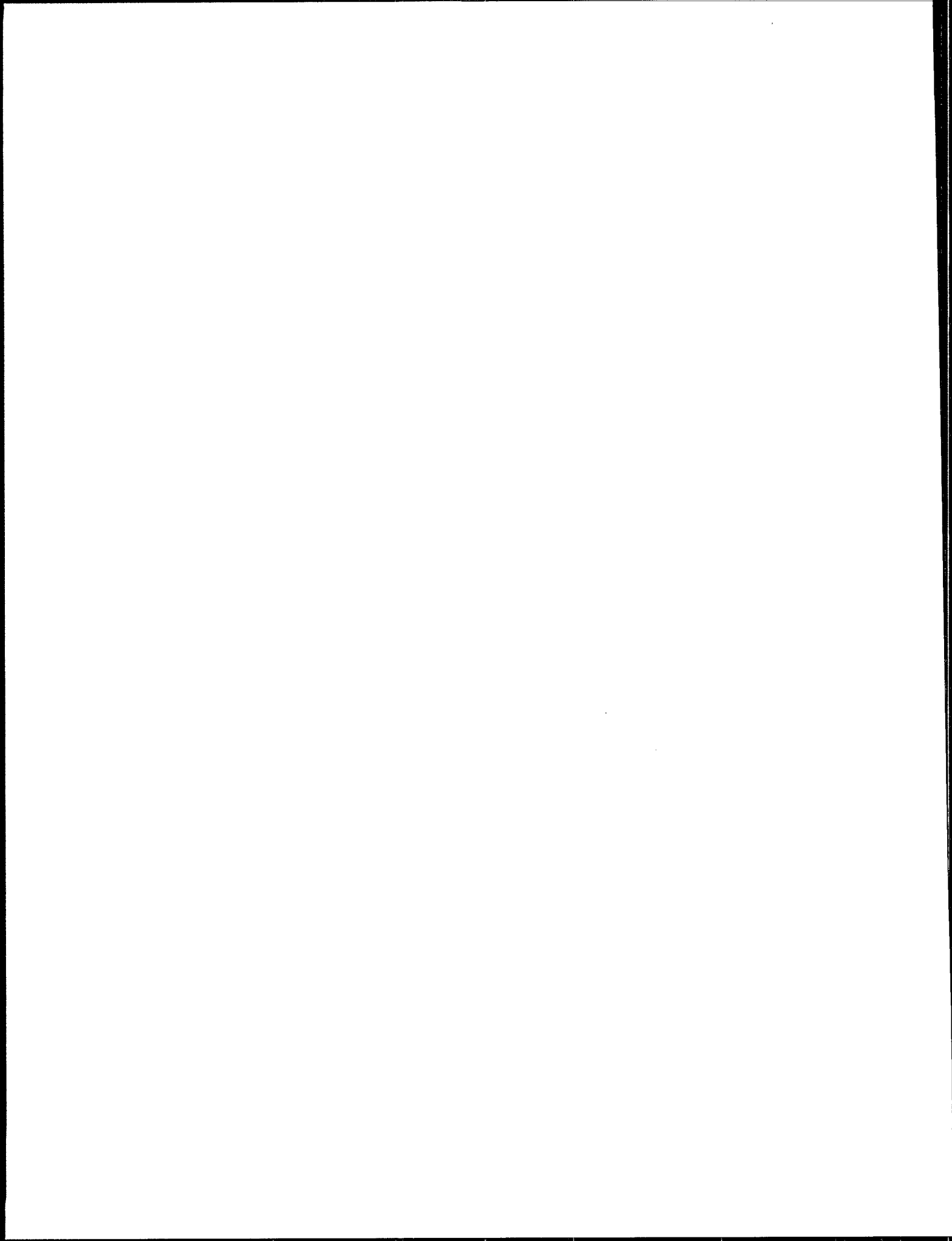
- *Purchasing is a big part of any water or wastewater operation. How this task is performed affects the budget and level of service.*
- *All utility operations have a purchasing procedure. Some are formal; some are not.*
- *The main purposes of a purchasing system are (1) to get goods and services on time and (2) at the lowest price.*
- *Here are some characteristics of a good purchasing system. Overhead # 17*
- *Centralize purchasing. This allows for better management control and professionalism in the purchasing activity.*
- *Use specifications, particularly for major purchases. You will be more likely to be satisfied with the product if you spend some time defining what you want in the first place.*
- *Use standard quote or bid forms. This makes it easier for you to compare quotes from various sources.*
- *No purchases should be made without a purchase order. Essentially a purchase order specifies the terms and conditions of the purchase such as specification, quantity, price and when delivery is due. This is essential for management control. It also makes bookkeeping easier.*



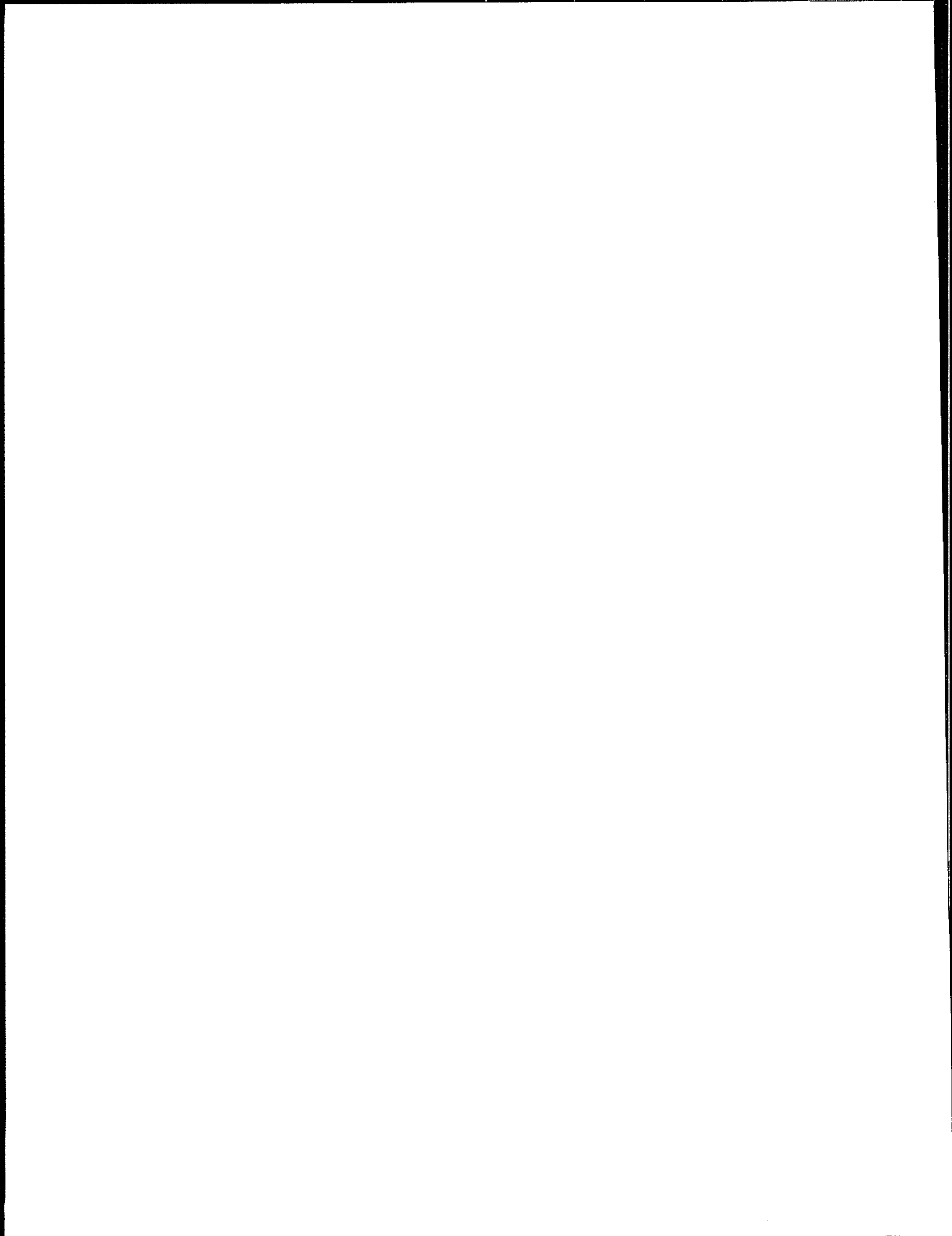
- *Have a policy on how to handle emergency purchases. Sometimes you won't have time to get a purchase order written up first or to sent out for quotes. Just don't let all purchases be handled as emergencies.*
- *As soon as goods are received, inspect them for quantity and quality before putting them in stock. Handle problems promptly.*
- *Keep records on inventory stock. Items used by several departments can be purchased more efficiently in bulk. Automatic reorder points can be established. Central warehousing can deter theft and give management better control.*

* **User Service Charge Systems**

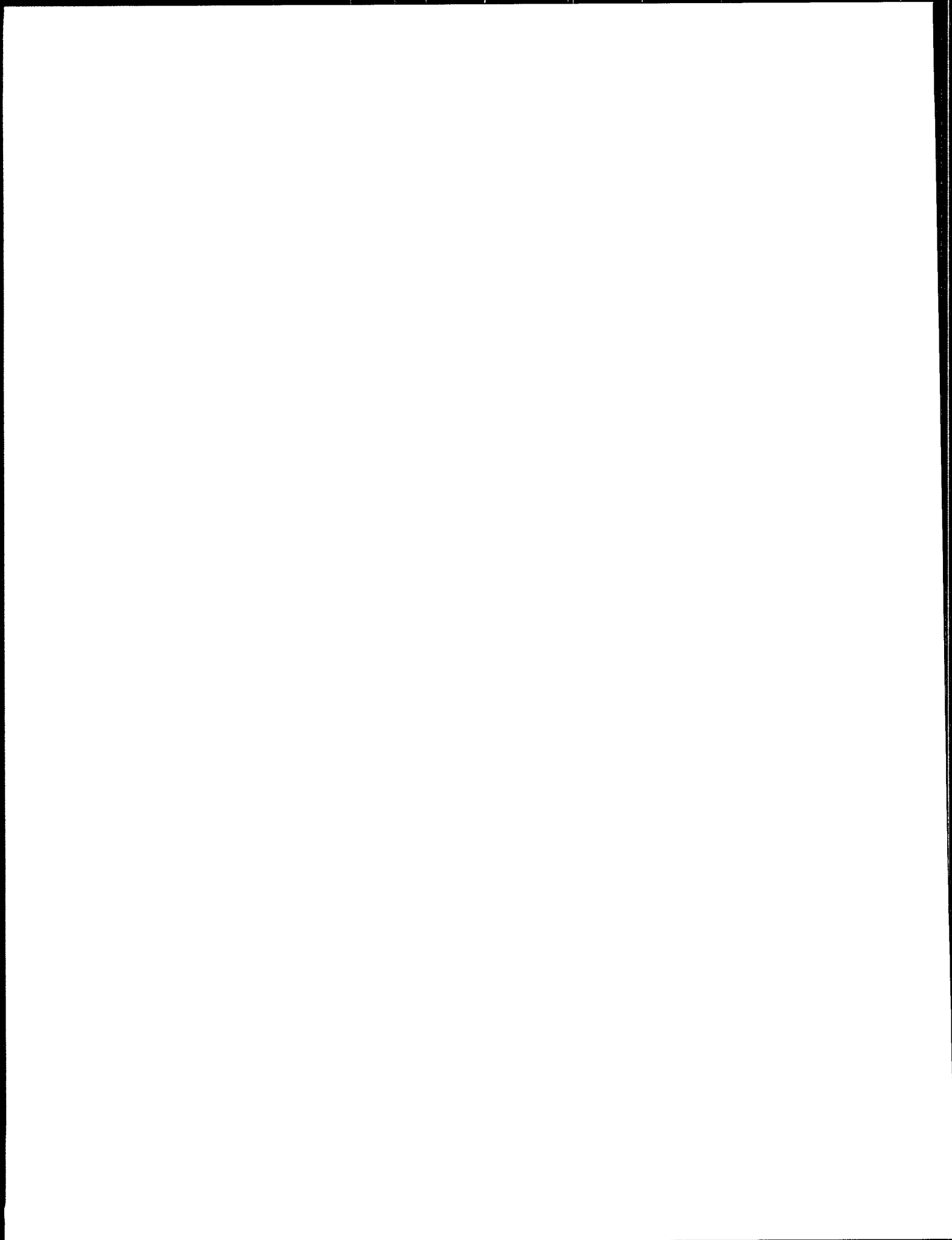
- *The following discussion applies to wastewater user service charge systems. The same principles are applicable for water systems.*
- *By now, you realize that the health of the user service charge system is crucial to the entire utility operation.*
- *Use overhead # 18*
- *As we've already mentioned, the user service charge is the central and most important piece of a utility's revenue puzzle.*
- *It usually accounts for 80-90% of a utility's total revenues.*
- *The user service charge system has two parts. One part sets the user rates and the other part collects the money.*



- *Here are some characteristics of a good user service charge system.*
- *Use overhead # 19*
- *Are costs identified?*
- *Are costs allocated proportional to use?*
- *What are the flow characteristics for each customer class?*
- *Is each customers' use known?*
- *Are customers billed proportional to use?*
- *Does the billing cycle provide timely revenues?*
- *Do your procedures assure collection of delinquent bills?*
- *The rate (along with other minor revenue sources) must cover the FULL cost of providing the service.*
- *For wastewater, the user service charge should charge each user their proportionate share of the operation, maintenance, and equipment replacement costs based on quantity and quality of discharge. If the discharge from all users is substantially equal - as expected from residential customers - then user fees would be based on the volume of wastewater.*
- *But, for commercial and industrial users who discharge high-strength waste, a surcharge should be imposed.*



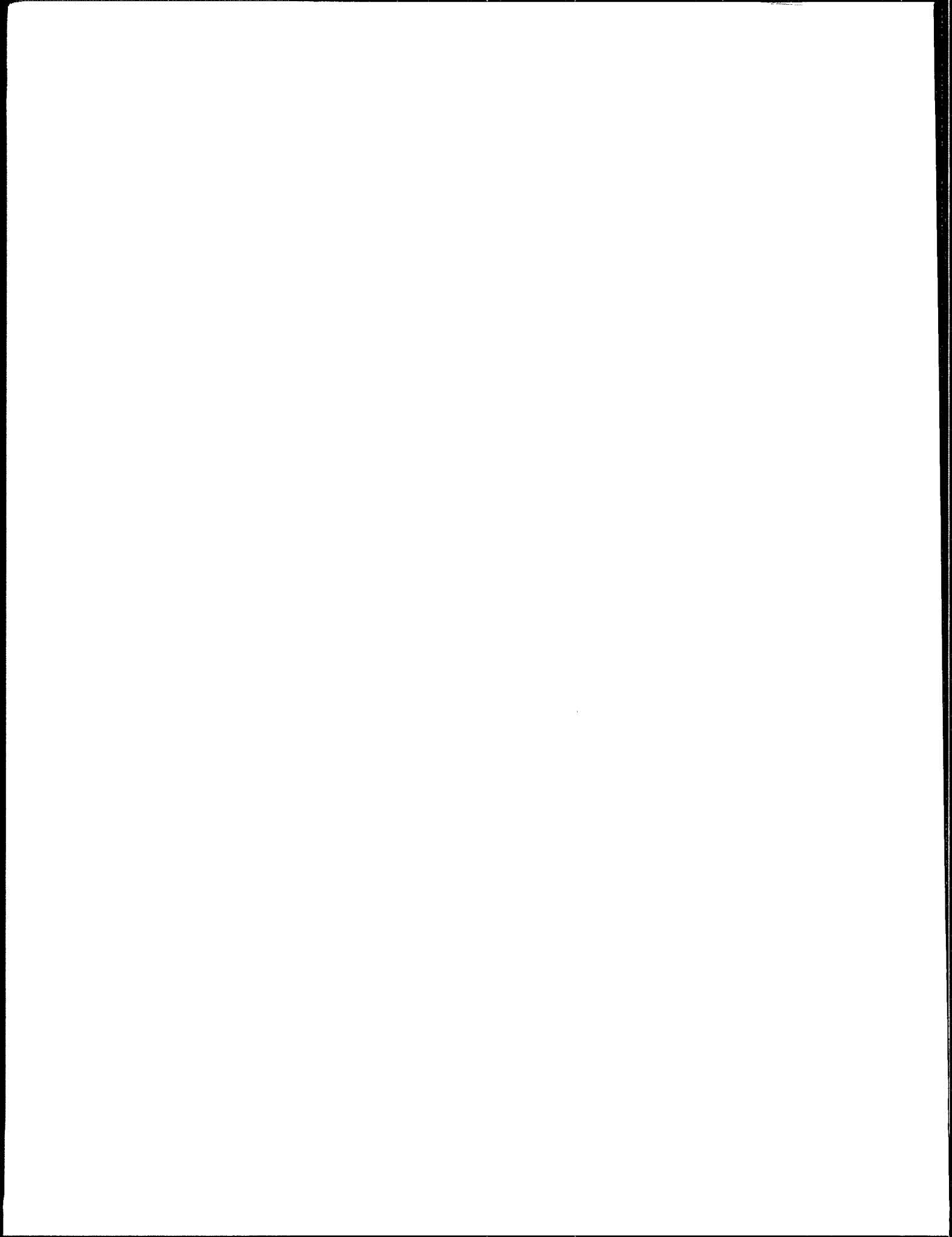
- *Know the basis for assessing the customer's use. Wastewater is usually not metered for residential and commercial usage. Normally, usage is based on water meter readings. It may be necessary to adjust water meter readings for water not discharged to the sanitary sewer system. If meters are not used, usage may be a uniform flat charge or based on equivalent dwelling units.*
- * **User Service Charge Structures.**
- *Look at the user service charge structure. Are the customers billed proportional to use?*
- *A commonly used rate structure is the uniform flat rate - customers pay the same fee regardless of quantity of use. This is only used on systems where no water meters are available. As you can readily see this structure is unfair. The user will either be paying too much or too little. This structure promotes waste.*
- *Use overhead # 20*
- *The single block rate is recommended. In this structure, each customer pays a minimum bill + a charge per 1,000 gallons (or c.f.) This system is fair because the charge for the service is in direct portion to usage. (Don't forget high strength dischargers have a surcharge added to the usage bill).*
- *The main features of the single block rate structure are a minimum bill + a charge per 1,000 gallons (or c.f.) The minimum bill covers the cost of billing (preparing the bill and postage). The total treatment rate (for wastewater) equals total costs for operation, maintenance, equipment replacement and debt service divided by total volume of treated wastewater.*



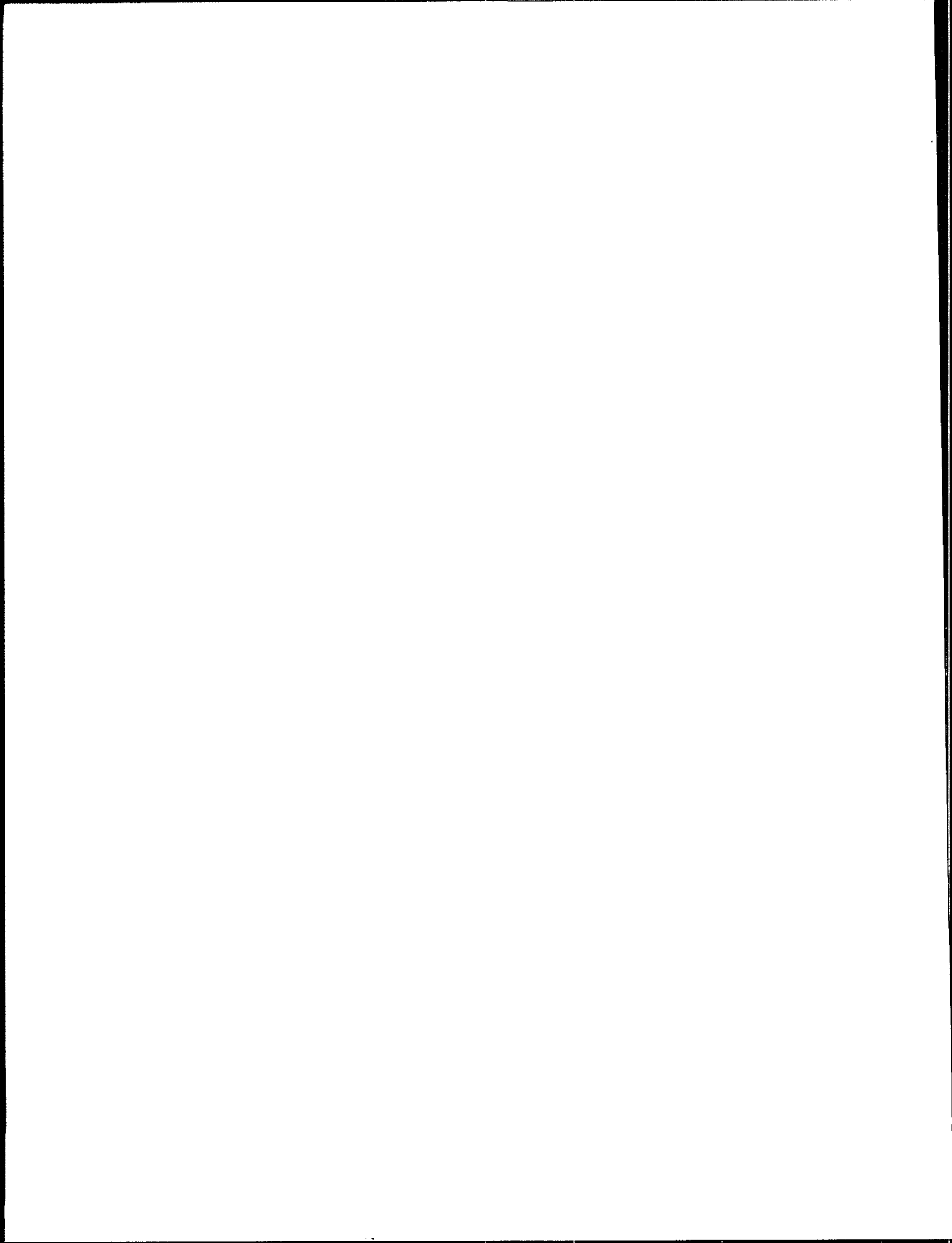
- *Use overhead #21*
- *Another structure is the decreasing block rate - where the price of usage declines as the amount used increases. The decreasing block rate discourages conservation.*
- *And increasing block rate is where the price of usage increases as the amount used increases. The increasing block rate encourages conservation.*
- *Customers accept rates that they view as fair and equal without any special rates for specific customers. This describes a uniform rate structure.*

*** Key Elements of a User Service Charge System for Wastewater**

- *The user service charge should include the costs of transporting and treating inflow/infiltration. When I/I costs cannot be assigned to any particular user or user category, the costs are distributed proportionally among all users. Collect surcharges for high strength wastes. A formula for this charge can be developed.*
- *The key to a good billing and collection system is to make sure that user service charges are collected very soon after providing the service. Time is money!*
- *Establish a policy for collecting delinquent bills. This policy needs to be written; be fair to both the utility and the customers, enforced and tracked.*
- *Remember, user service charges have a short life span. Examine your user service charge yearly and adjust if needed. Keep customers informed at least annually of the current rate structure.*

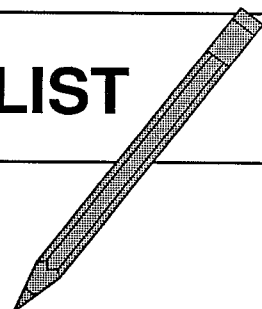


- *Be aware that for EPA funded facilities, the utility must comply with these key criteria (most of which have been discussed):*
 - a. *Charge each user proportional to quantity and quality of discharge*
 - b. *Notify user of rates annually*
 - c. *Impose surcharges for wastewater that requires additional treatment*
 - d. *Establish a financial management system to account for revenues and expenses*
 - e. *Other EPA requirements may apply*
- *Use overhead # 22*
- *There may also be state and local requirements, such as, the accounting system to be used. We've already talked about the accrual method of accounting. Reserve funds may be needed to guarantee minimum coverage ratios on debt.*

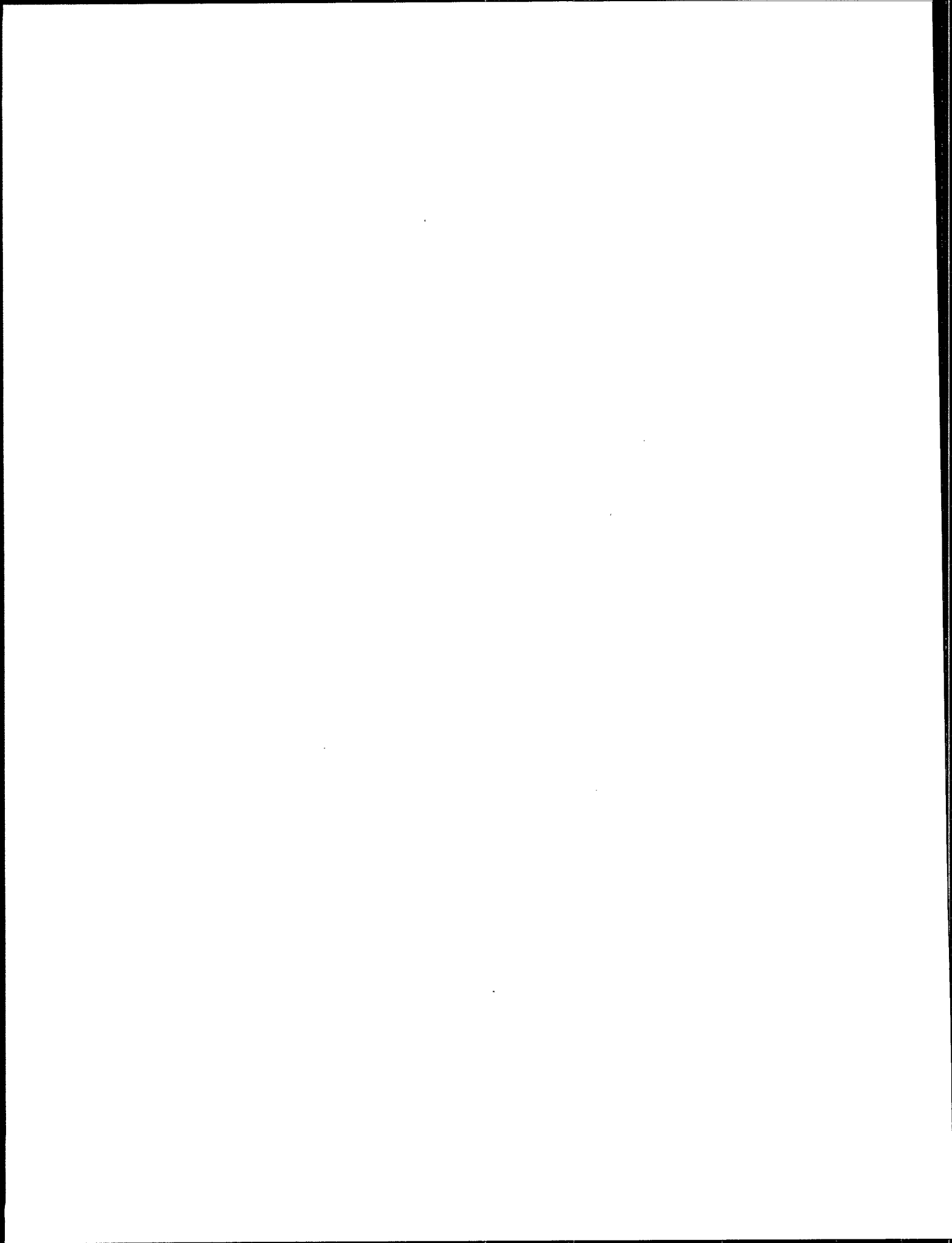


FINANCIAL REPORTING CHECKLIST

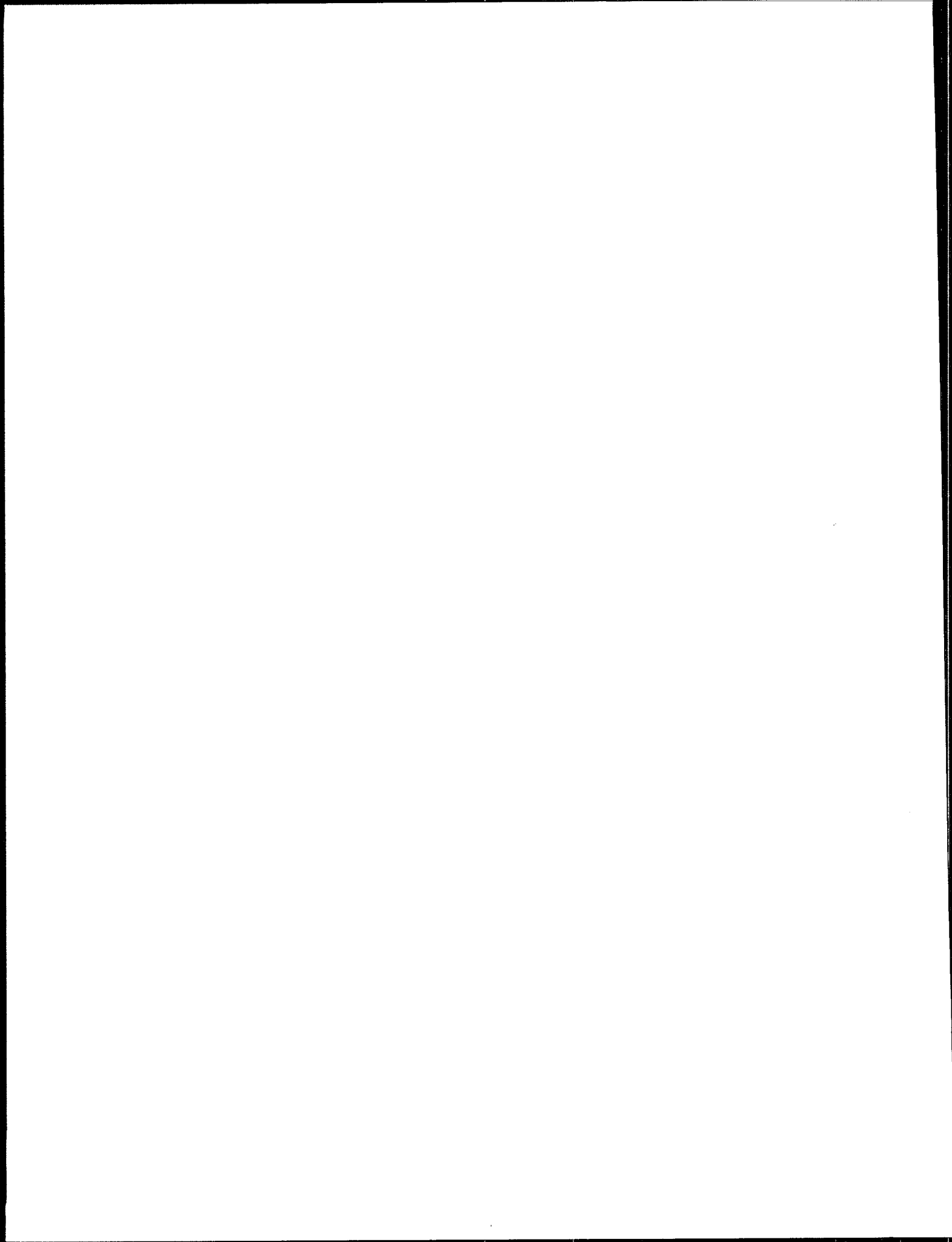
Is this done at your utility?



	Yes	No	Unsure
Water and wastewater operations are accounted for in separate <i>enterprise funds</i> .			
Each utility uses <i>accrual accounting</i> methods.			
Each utility receives monthly reports of revenues and expenses.			
Reports show both budget and actual figures.			
Reports arrive by the 10th day of the following month.			
The utility keeps its financial reports for at least four years.			



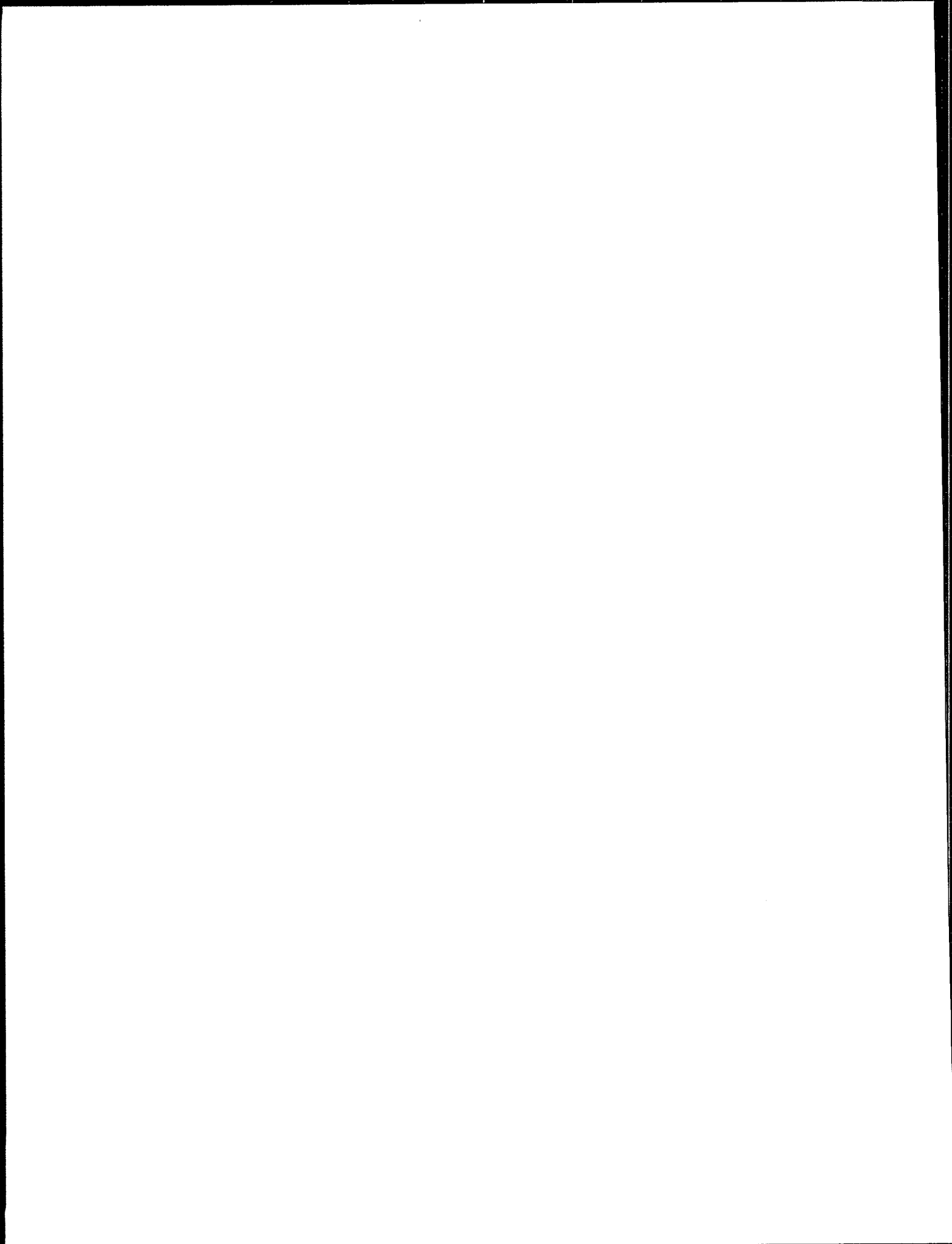
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ANYTOWN, USA WASTEWATER DEPARTMENT

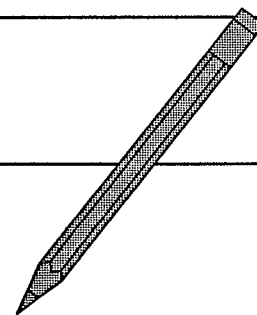
LEDGER NUMBER	LEDGER NAME	MTD ACTUAL	TOTAL BUDGET
411 - 5217	Insurance	\$436.89	\$3,750.00
411 - 5220	Auditing Services	724.22	6,290.00
411 - 5245	Postage	145.87	1,500.00
411 - 5277	Print, Duplicate	1,003.65	9,600.00
411 - 5299	Electric Service	3,309.71	45,000.00
411 - 5223	Water Service	663.37	7,800.00
411 - 5231	Gas Service	4,281.99	35,000.00
411 - 5209	Office Supplies	253.43	2,500.00
411 - 5285	Janitorial Supplies	137.24	1,000.00
411 - 5266	Telephone Service	881.10	10,500.00
411 - 5295	Office Forms	77.53	500.00
411 - 5246	Rent	450.00	5,400.00
411 - 5221	Bad Debt Expense	339.23	3,000.00
411 - 5290	Messenger Delivery	27.45	250.00
411 - 5225	Legal Services	888.56	3,000.00
411 - 5253	Salaries - Regular	1,998.67	28,000.00
411 - 5238	Salaries - Overtime	921.68	10,000.00
411 - 5212	Retirement	256.84	2,200.00

FIGURE 16

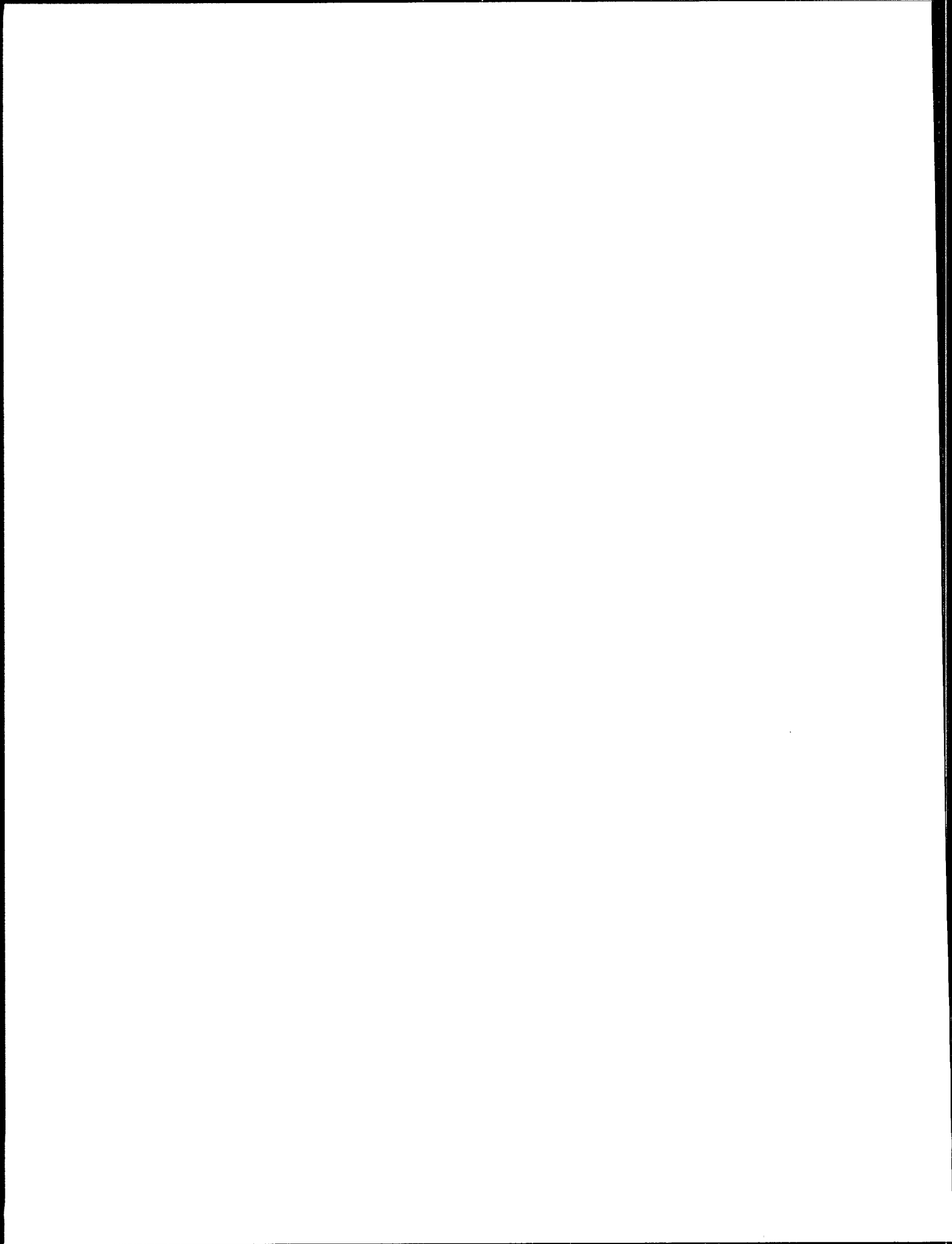


PURCHASING CHECKLIST

Is this done at your utility?

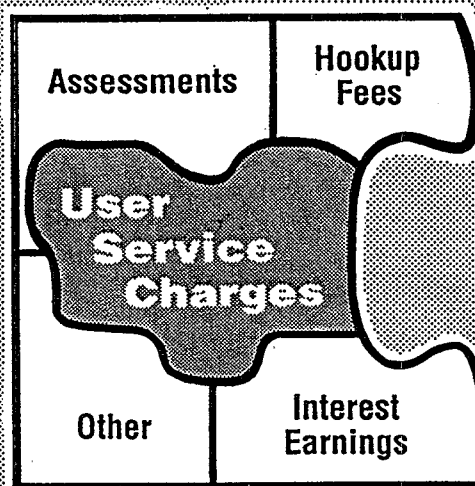


	Yes	No	Unsure
Purchasing is centralized.			
Major purchases are based on specifications that define requirements.			
Standard quote/bid forms are used.			
No purchases are made without a purchase order.			
Exceptions are specified for emergency purchases.			
Goods are inspected immediately for quality and damage.			
Stock quantities are specified for all inventory items.			

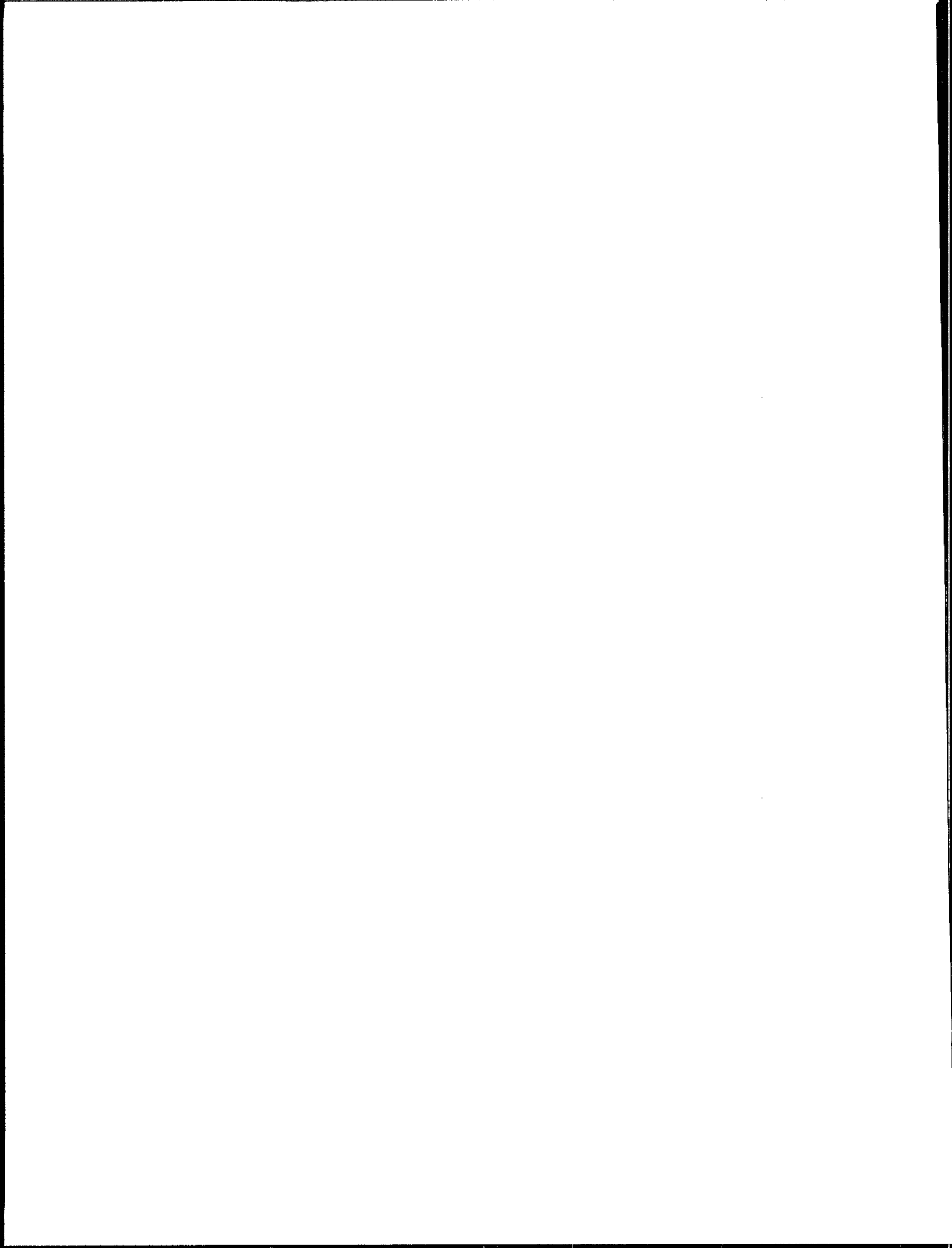


Revenues...

...are all monies received for wastewater operations. Get these figures from management, budgets and financial statements.



A user service charge is the central and most important piece of a facility's financial puzzle.

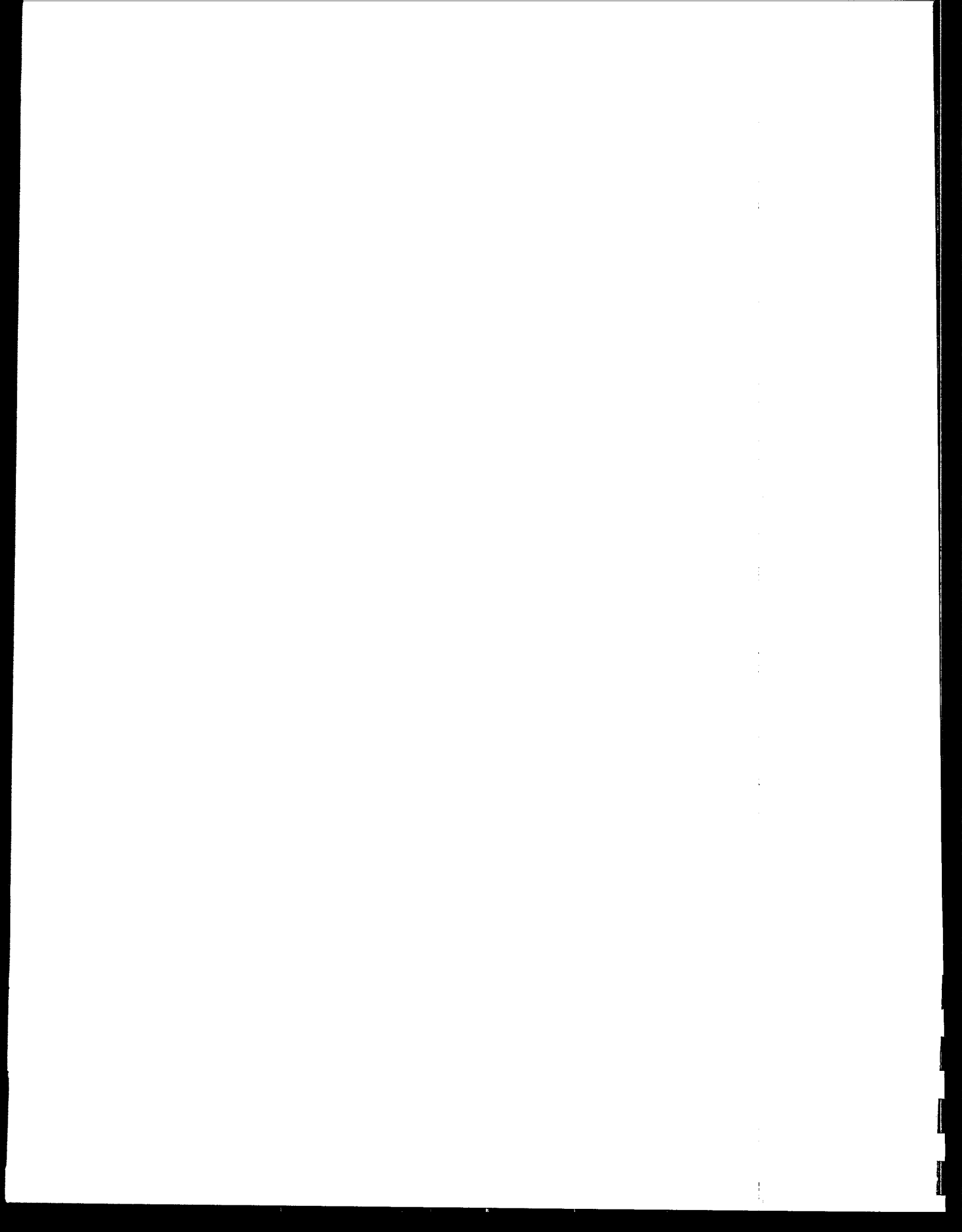


USER SERVICE CHARGES CHECKLIST

Is this done at your utility?



	Yes	No	Unsure
All costs are identified.			
Costs are allocated proportionately based on use.			
Flow characteristics are known for each customer class.			
Each customer's use is known or fairly estimated.			
Customers are billed proportionately to use.			
Billing cycle provides timely revenues.			
Established procedures assure collection of delinquent bills.			



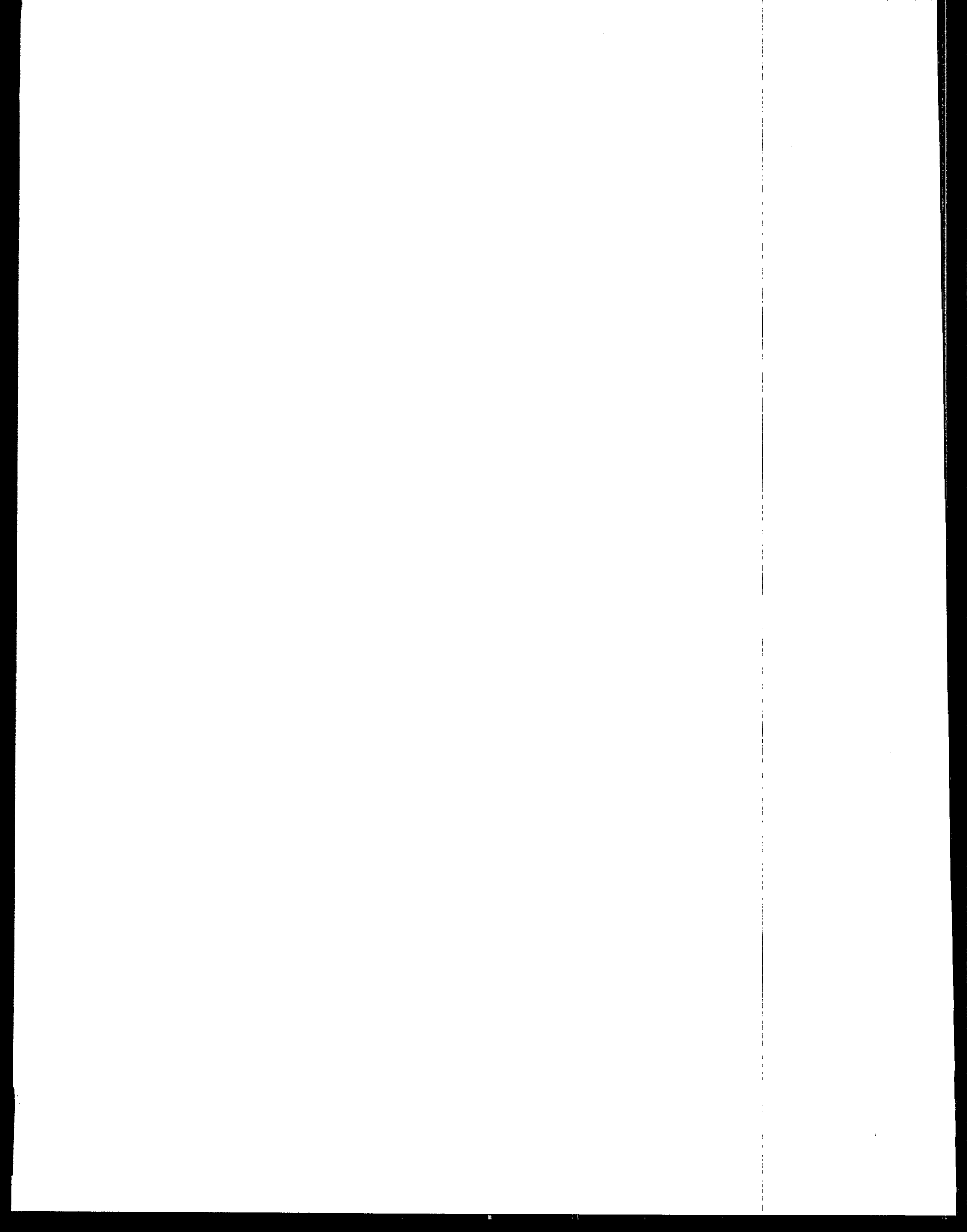
SMITHTOWN, TENNESSEE SEWER RATE SCHEDULE

- MINIMUM BILL = \$2.50
- SEWER USAGE IS AT THE RATE OF \$3.50 / 1,000 GALLONS.
- SEWER SERVICE CHARGES WILL BE BASED ON WATER METER READINGS.

DETERMINING USER SERVICE CHARGE RATES METERED WATER

Current Wastewater Services Billing Schedule Monthly Rates

Total Gallons Treated		Rate per 1,000 gallons
<i>From . . .</i>	<i>To . . .</i>	
0	2,000	\$2.00
2,001	4,000	1.90
4,001	6,000	1.80
6,001	10,000	1.50
10,001	Over	1.40



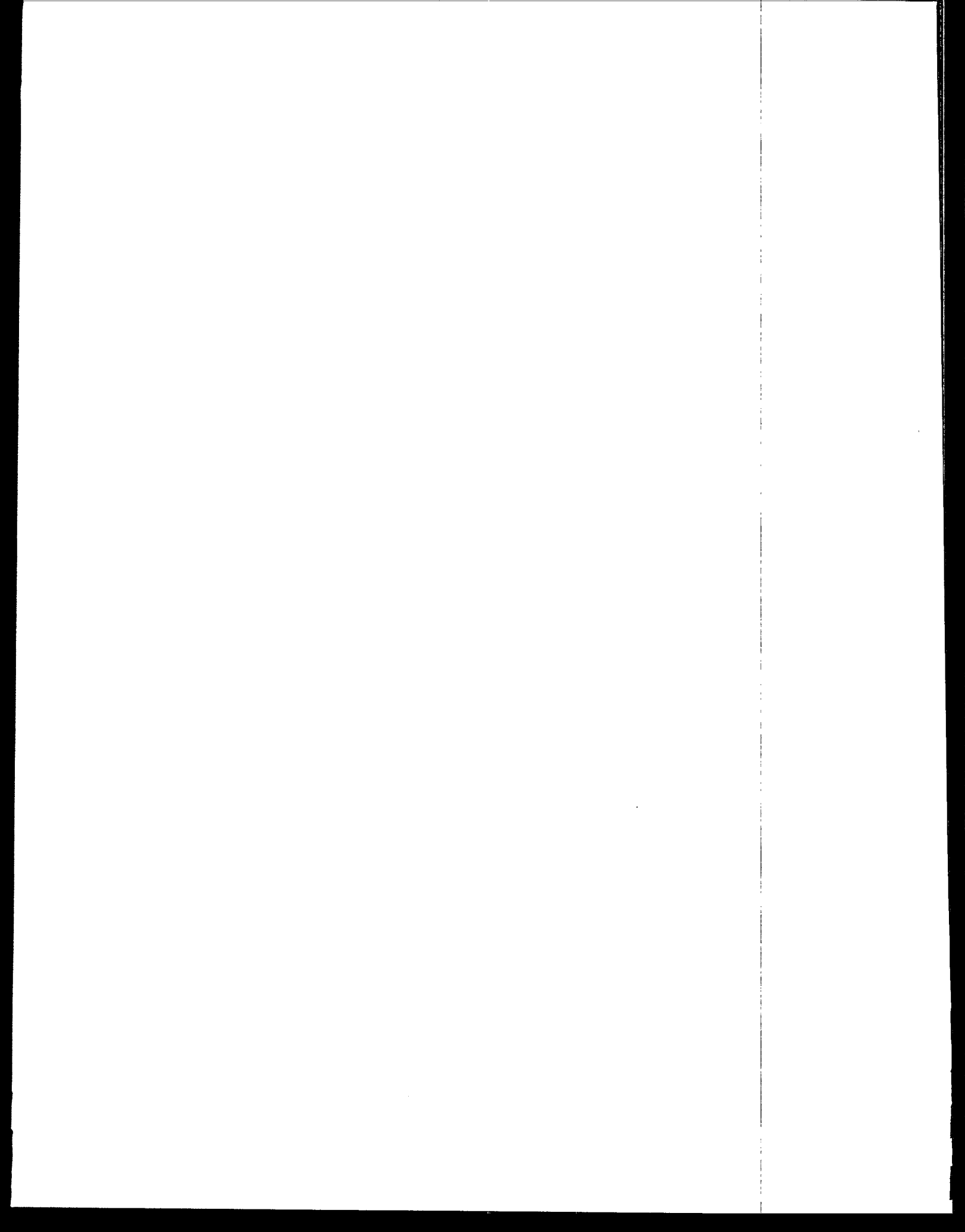
SPECIAL USER CHARGE REQUIREMENTS

For EPA-funded facilities, the utility must comply with its EPA-approved user charge system to:

- Charge each user (or user class) its proportionate share of the operation, maintenance and equipment replacement costs based on quantity and quality of discharged wastes.
- Notify users of rates annually.
- Distribute infiltration and inflow costs proportionately among all users.
- Impose surcharges for wastewater that required additional treatment.
- Establish a financial management system to account for revenues and expenses. (For further EPA requirements, see page 23.)

State and local governments may:

- Specify an acceptable accounting system -- how a utility records, classifies and reports information on finances and operations of the system.
- Require certain reserve funds or coverage ratios on debt.



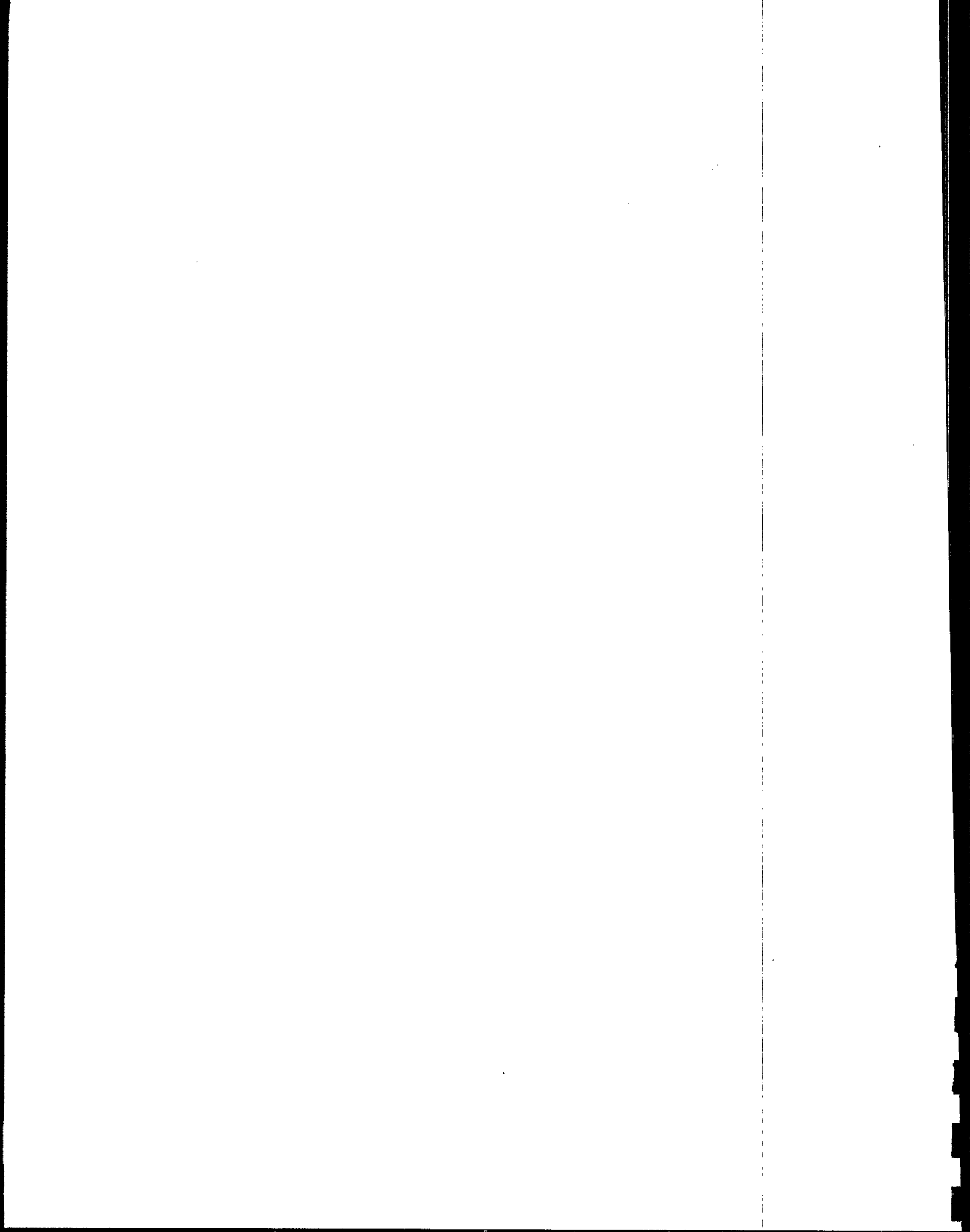
III.C. BUILD FINANCIAL HEALTH

- * **Improve Budgeting**
- *You can build better financial health through improved budgeting for the utility.*
- *The key to good budgeting is to have a thorough understanding of the demands on the utility and the way the utility meets those demands.*
- *Be involved in preparing and using the budget. Then you will have a better understanding of it.*
- *Think of a budget as a financial road map.*
- *We've already discussed the importance of comparing the projected budget to the actual budget at the end of every month. But, how do you prepare a budget?*
- *Start preparing the budget for next fiscal year about 3 months before the end of this fiscal year.*
- *Use Overhead #23*
- *For the expense budget: establish the required debt service costs and reserves. The debt service costs are the annual principal and interest payments on loans and bonds. The debt service reserve are funds set aside to provide additional security for a debt obligation. The amount needed for this purpose is generally specified in loan and bond agreements. The debt service reserve is in addition to your loan repayment.*

- *Next, establish the equipment replacement fund level. Recall that we defined equipment replacement fund earlier as a fund to be used for replacing equipment necessary to maintain the capacity and performance for which the treatment facility was designed and constructed.*
- *Next, estimate the cost of operating the system. This includes salaries, benefits, chemicals, utilities and administrative costs.*
- *Use Overhead #24*
- *For the revenue budget, try to estimate revenues as accurately as you can. When in doubt, estimate revenues low and expenses high.*
- *Let's take another look at the main revenue and expense components of your utility budget.*
- *Use Overhead #25*

*** Long Range Budgeting**

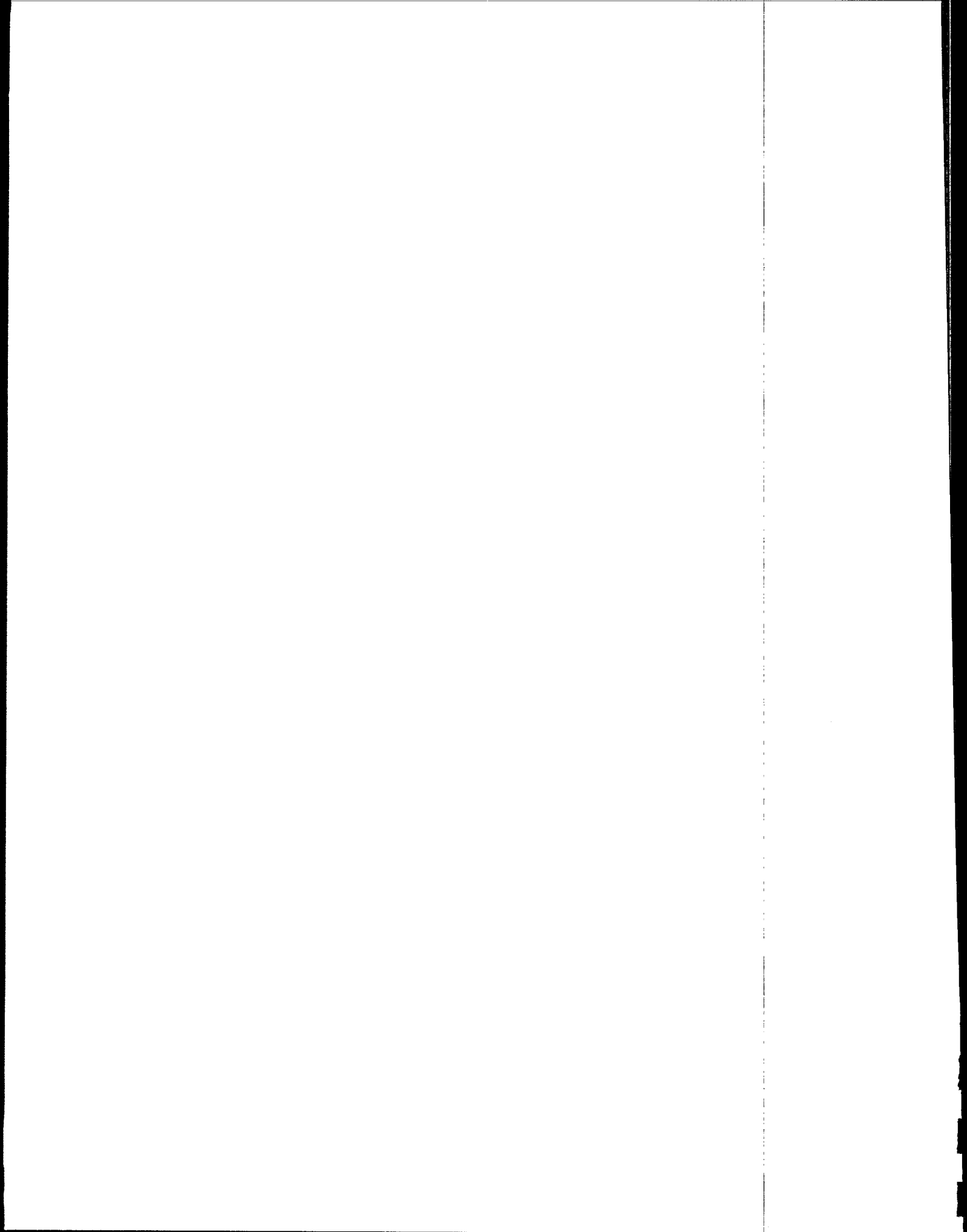
- *Don't just think short-term or year-to-year. You'll need to develop capital planning skills to build future improvements.*
- *Capital projects are things like new plants or plant expansions, new line extensions, sewer line rehabilitation and so forth.*
- *Capital planning involves figuring out needed improvements; establishing timetables; and developing a financing plan to fund the improvements.*



WASTEWATER EXPENSE BUDGET

199_____

ADMINISTRATION	\$ <u>125,000</u>
WAGES	\$ <u>375,000</u>
BENEFITS	\$ <u>75,000</u>
ELECTRICITY	\$ <u>150,000</u>
CHEMICALS	\$ <u>30,000</u>
FUEL AND UTILITIES	\$ <u>25,000</u>
PARTS	\$ <u>20,000</u>
EQUIPMENT REPLACEMENT FUND	\$ <u>200,000</u>
PRINCIPAL AND INTEREST PAYMENTS	\$ <u>450,000</u>
OTHER	\$ <u>25,000</u>
TOTAL OPERATING EXPENSES	\$ <u>1,475,000</u>



WASTEWATER REVENUE BUDGET

199_____

USER SERVICE CHARGES \$ 1,700,000

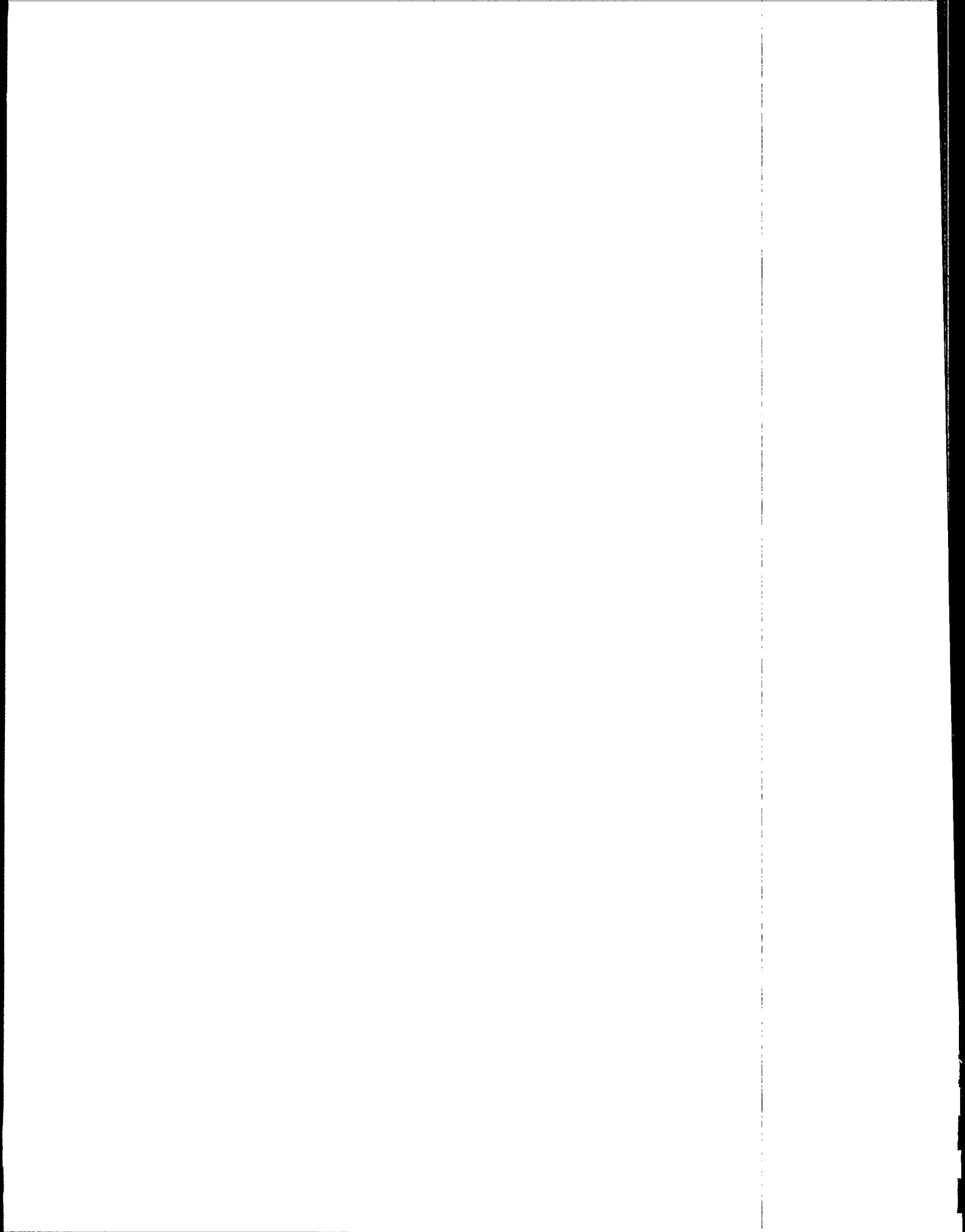
HOOK-UP/IMPACT FEES \$ 25,000

TAXES/ASSESSMENTS \$ 10,000

INTEREST EARNINGS \$ 50,000

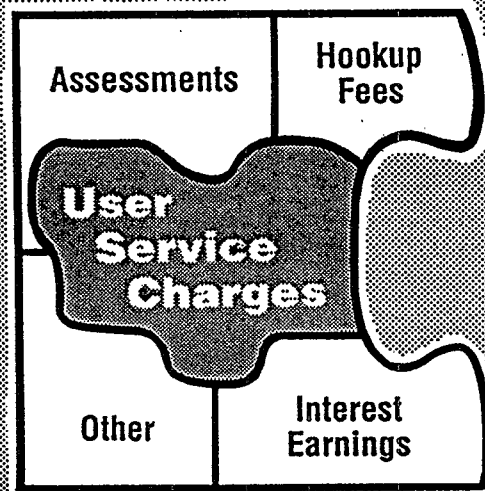
OTHER \$ 5,000

TOTAL REVENUE \$ 1,790,000



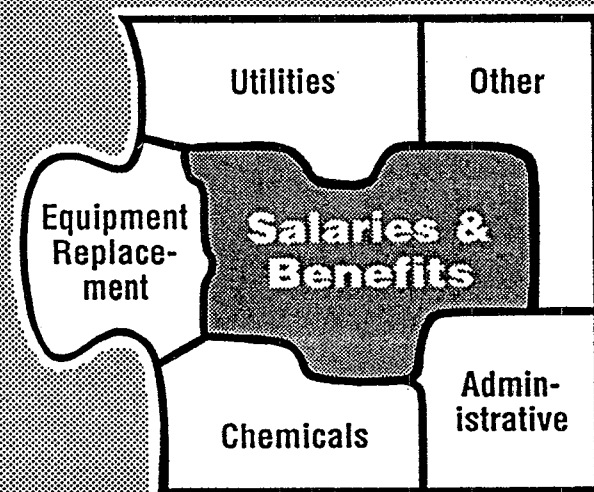
Revenues...

...are all monies received for wastewater operations. Get these figures from management, budgets and financial statements.



Expenses...

...are the costs of operating, maintaining, replacing equipment and paying debt service for a wastewater system.



III.D. ADDITIONAL FACTORS THAT AFFECT FINANCIAL HEALTH

* Organizational Structure

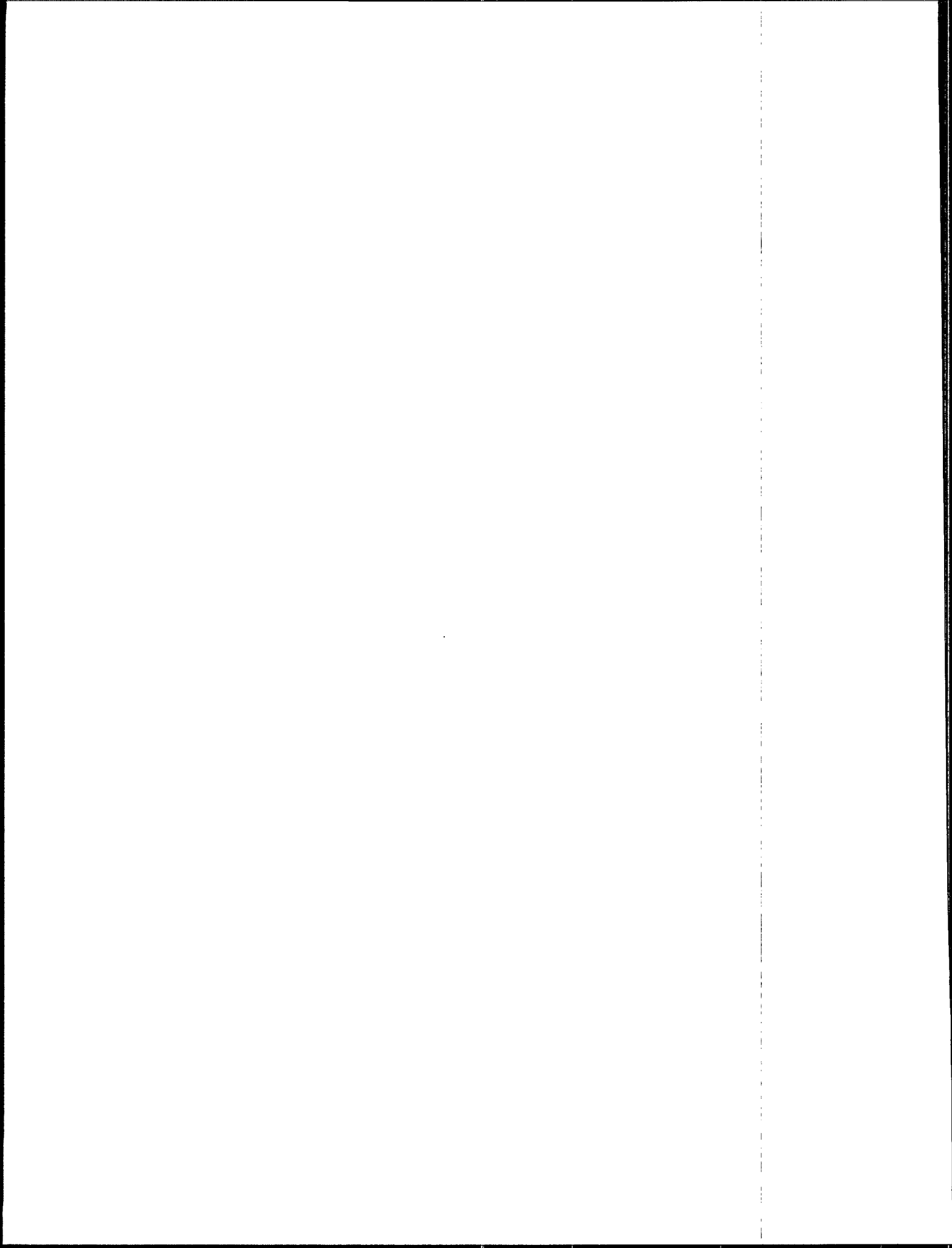
- *The utility usually operates as an authority or as a municipal department.*
- *Authorities can be regional, municipal or independent. Regional authorities serve more than one political jurisdiction; municipal authorities are owned by the municipality; independent authorities are created by state legislation.*
- *Each structure has advantages and disadvantages. For instance, regional authorities can achieve greater economies of scale; with municipal authorities, the utility is owned by the municipality, but it has operational autonomy which provides insulation from politics. A disadvantage of independent authorities may be their self-perpetuating nature and lack of accountability. However, they are almost always created to serve a need no other agent is able to serve.*
- *When the utility is structured as a department within the local government, it has support from other local government departments. But, it is subject to political influences.*
- *Any organizational structure can work if it is financially self-sufficient and well managed.*
- *An organizational structure that is politically independent may be better able to control the rate setting process.*

* **Staff Training**

- *Studies of water and wastewater plants' performance cite operators and staff with insufficient experience and training as a major factor in poor performance of the facility.*
- *Many plants are being operated by personnel who do not meet state certification requirements. Frequently, these are poorly performing facilities.*
- *It is important to include money for staff training in the utility budget. This often helps acquire and retain quality people.*
- *Better trained staff can more effectively utilize supplies and cut equipment replacement costs by performing better maintenance.*

* **Personnel Turnover**

- *Staff who are supported by adequate training opportunities are generally more satisfied.*
- *Wastewater treatment is frequently considered a low prestige field.*
- *Small communities often do not pay operators enough to retain qualified personnel. This costs the community more in the long run because poor operations means more equipment breakdowns due to poor maintenance knowledge.*

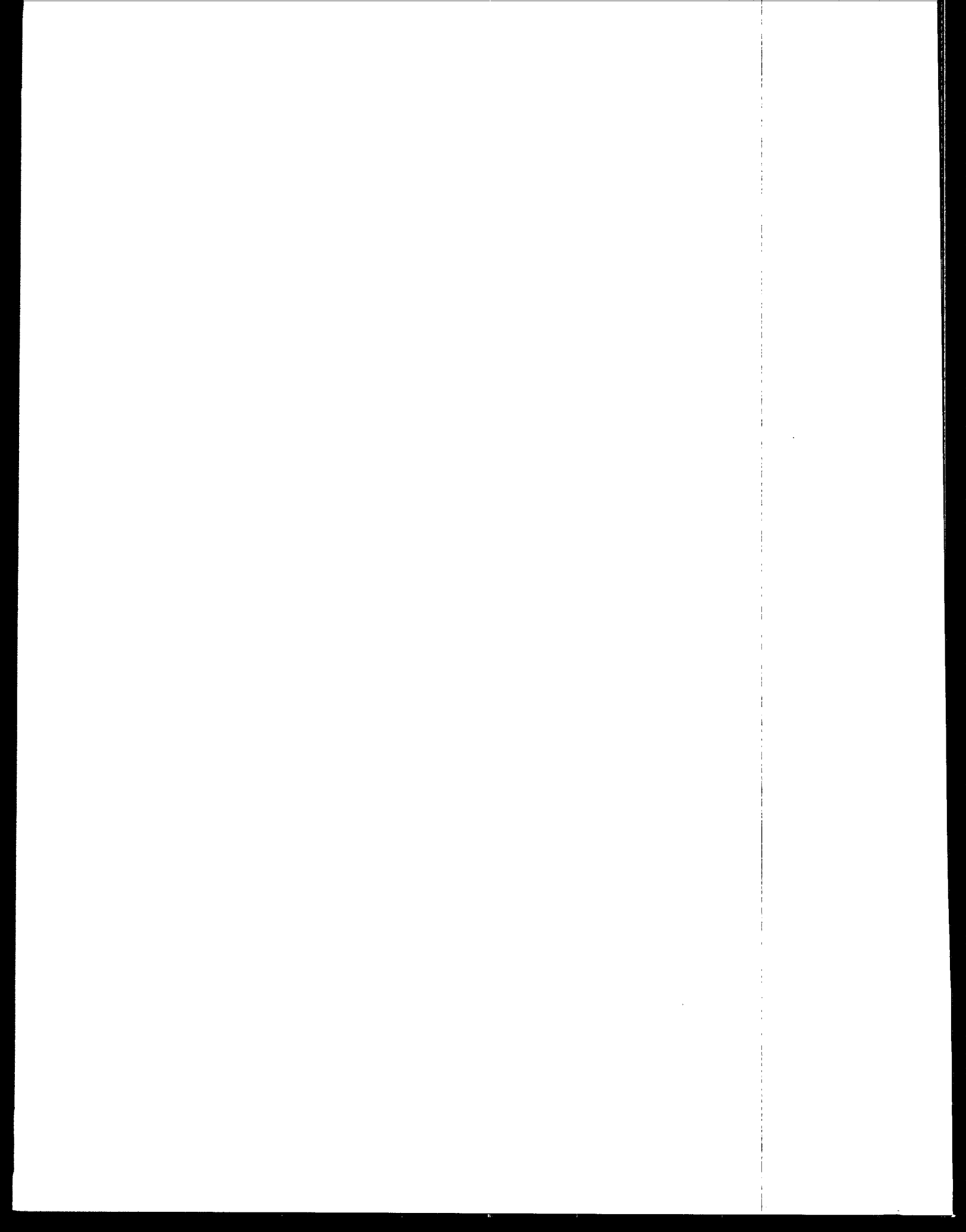


* **Operating Procedures and Policies**

- *Written operating policies and procedures are an earmark of a well-managed operation.*
- *It is not enough to develop a sewer use ordinance or connection charge policy and put it on the shelf. It must be followed and periodically updated.*
- *One problem with having consultants develop all your written procedures, is that the community may not buy-in or fully understand the significance of procedures.*
- *Communities must be intimately involved in the process and the final product.*

* **Customer Relations**

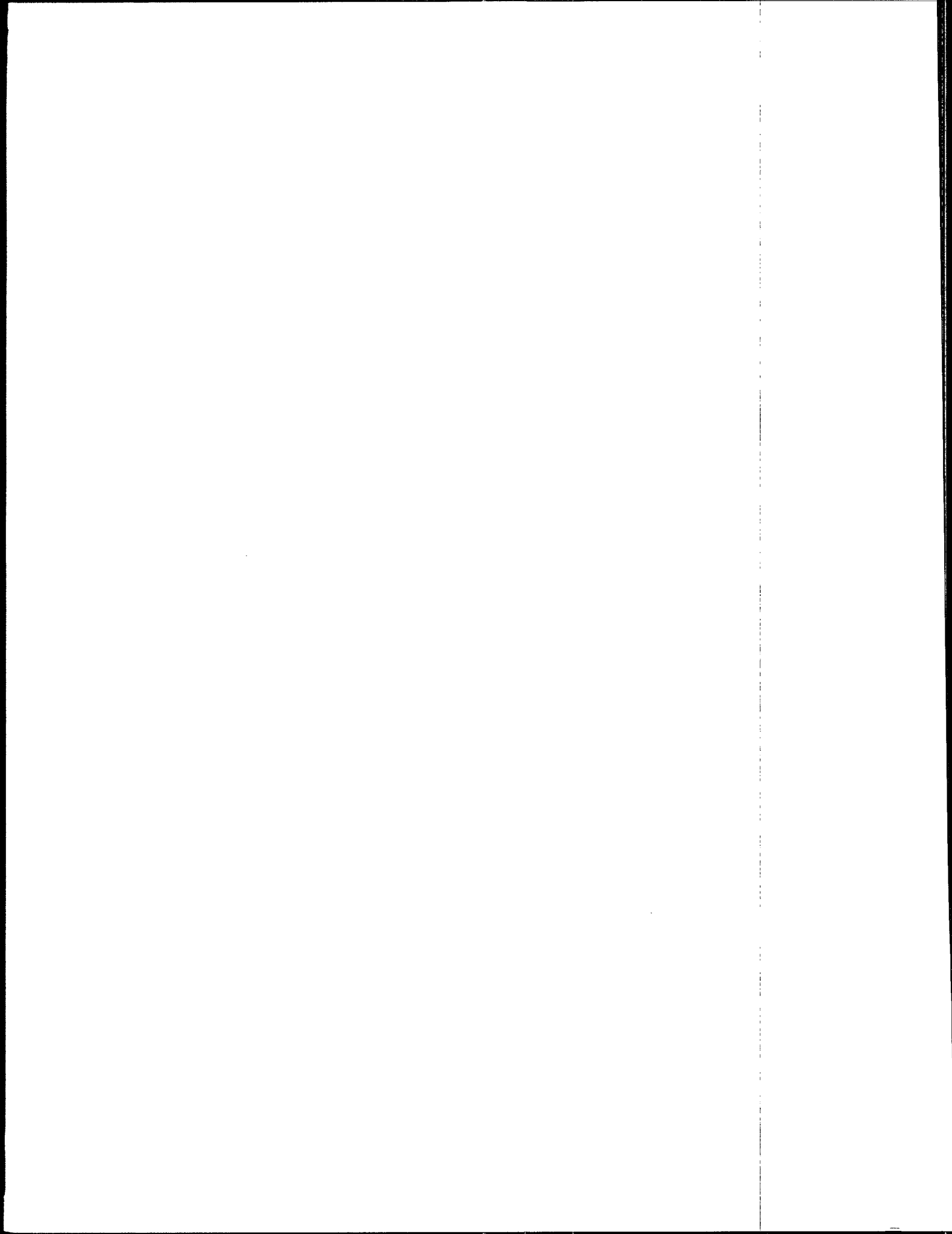
- *As you will see in a later section, it is vital to have the customers on your side.*
- *The customers should understand the value of the service your facility provides. This is necessary to gain community acceptance and support to carry out the programs you need. Such as, a new plant expansion, sewer extensions to a new area, a rate increase, etc.*
- *Building good customer relations takes some effort, but it's worth it.*
- *Public relations efforts involve public meetings, plant tours, citizen advisory boards and media coverage.*



IV. EVALUATING USER SERVICE CHARGE SYSTEMS FOR WASTEWATER

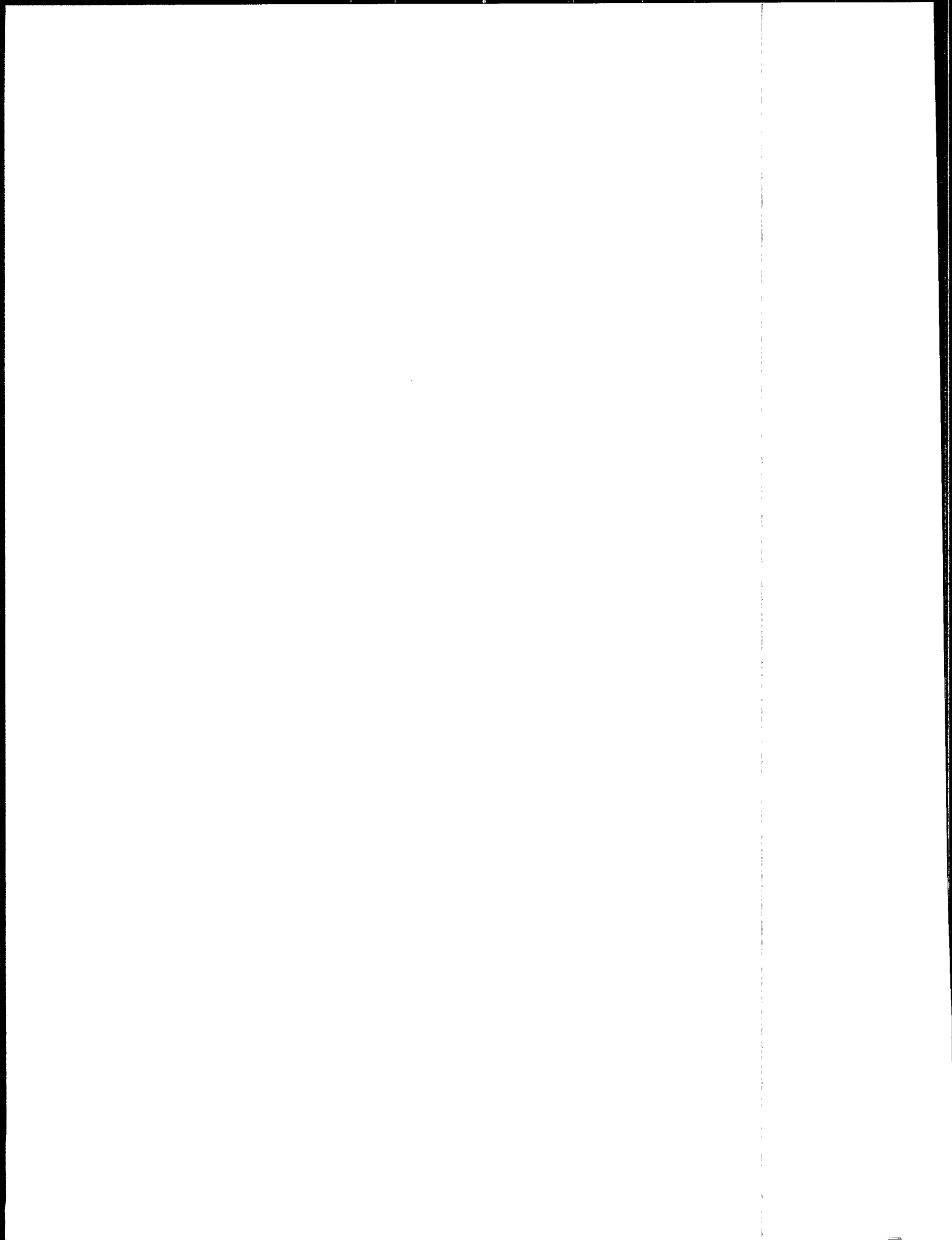
- A. EVALUATING REVENUES**
- B. EVALUATING EXPENSES**
- C. A STEP-BY-STEP EVALUATION PROCESS**
- D. USER SERVICE CHARGE WORKSHEETS**
- E. REPORT ON FINDINGS**

Tell the topics that will be covered in this session.



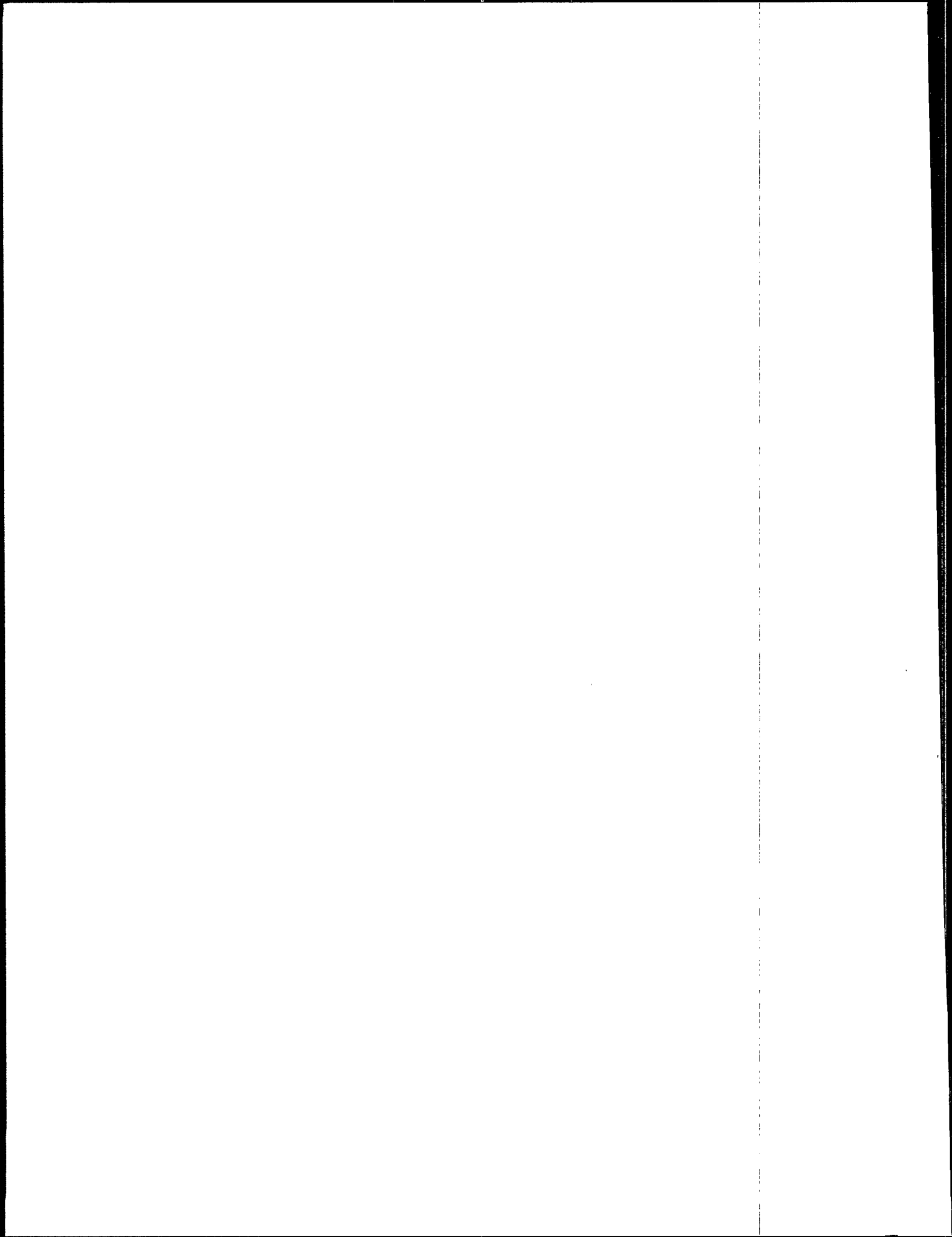
IV.A. EVALUATING REVENUES

- *Let's review. Our main objective here is to make sure water and wastewater utilities are financially self-sufficient.*
- *For that to occur, revenues generated by the operation must at least equal expenses.*
- *We've just defined and discussed the revenue components of a utility operation.*
- *Use overhead # 26*
- *Again, they are:*
- * **User Service Charge - the largest component**
- * **Hookup/Impact Fees**
- * **Taxes and Assessments**
- * **Interest Earnings**
- * **Other**



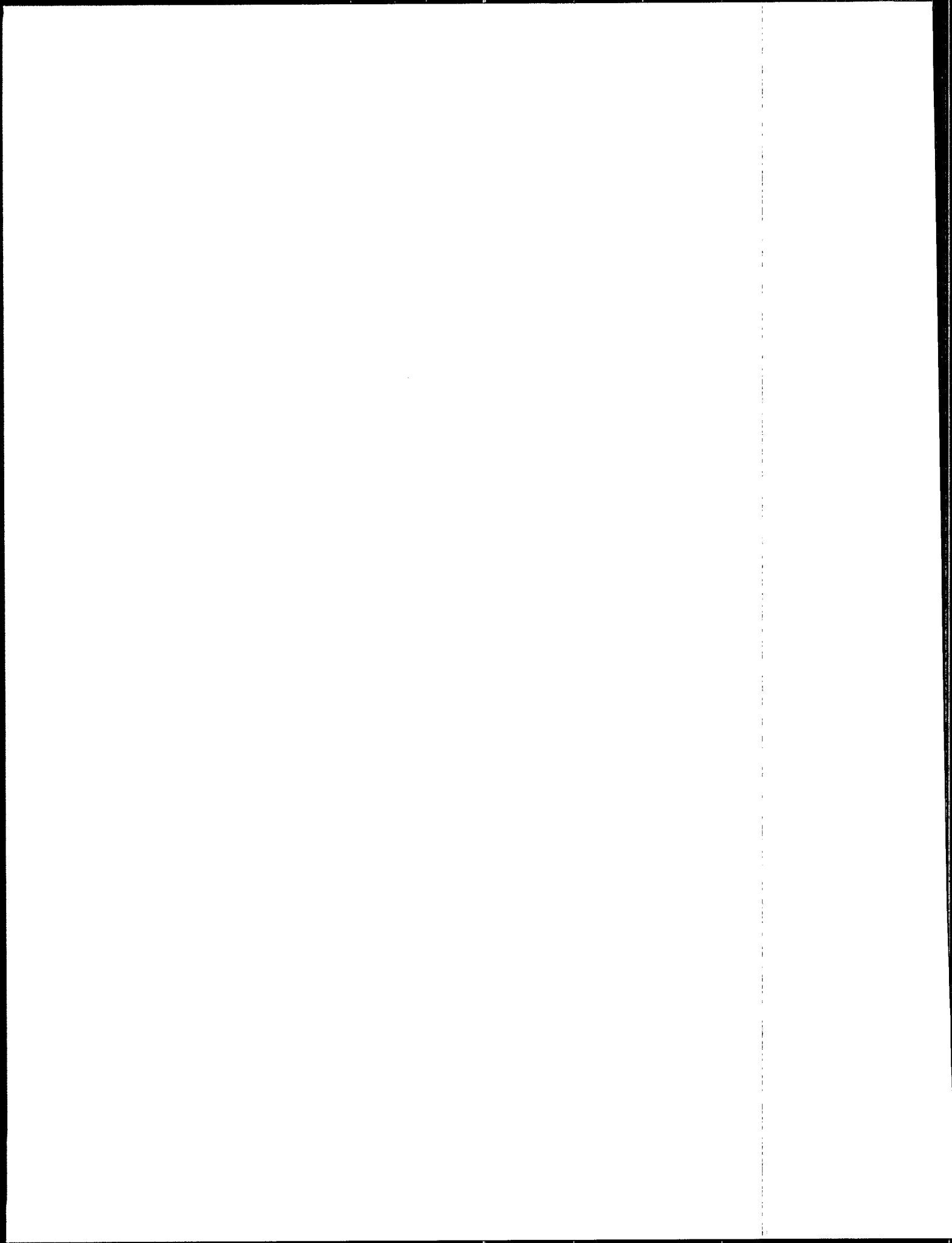
IV.B. EVALUATING EXPENSES

- *Likewise, we've defined and discussed these expense components*
- *Use overhead # 27*
- *They are:*
 - * **Salaries and Benefits - the largest component**
 - * **Utilities**
 - * **Chemicals**
 - * **Equipment Replacement Costs**
 - * **Administrative**
 - * **Other Expenses**
- *Operating expenses do not include capital expenditures and depreciation.*



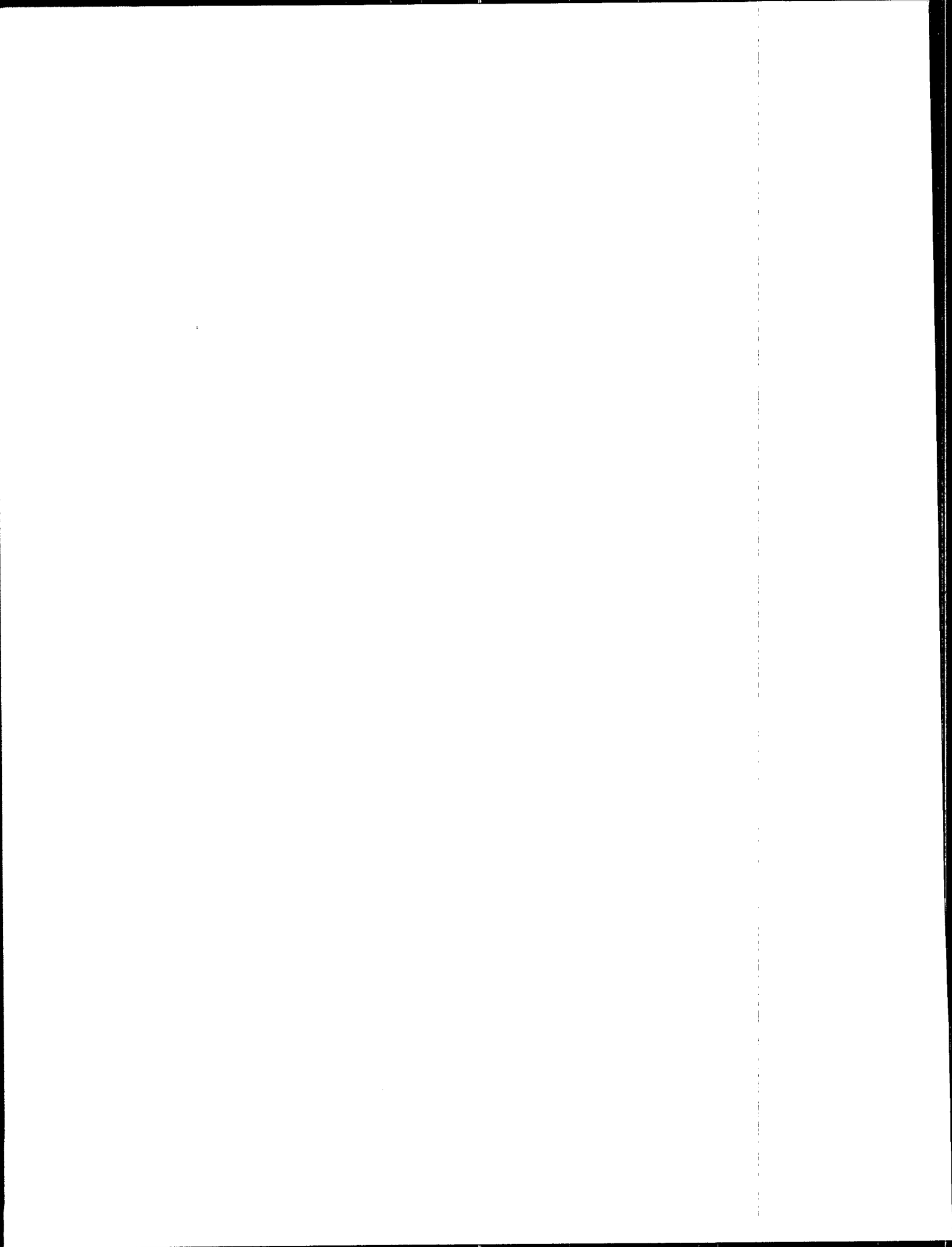
IV.C. A STEP-BY-STEP EVALUATION PROCESS

- 1. Understand Why the Evaluation of the Community's User Service Charge System is Important**
- 2. Recognize the Components of the User Service Charge System**
- 3. Prepare for Appointment with Financial Management Staff**
- 4. Accomplishments of the Review**
- 5. Clearly Understand the Problems**
- 6. The Report**
- 7. Follow-up on the Report**



IV.C. A STEP-BY-STEP EVALUATION PROCESS

1. Understand Why the Evaluation of the Community's User Service Charge System is Important
 - *Now we will apply our knowledge of financial management and user charges. We will evaluate the user charge components of a utility's financial management system. This is the major revenue generating system for the utility.*
 - *To do this, clearly defined goals you want the evaluation to accomplish. Two major goals would be - Is enough money coming in to pay for expenses? Do user rates need to be adjusted?*
 - *Primarily you want to check the financial health of the system. To do this, you will need to use the ratios and checklists previously discussed as well as other financial documents.*
 - *List ratios, financial health checks and documents you'll need to see.*
 - *Your purpose is to determine whether the operation is financially sound. You must probe, gather information and become very familiar with the operation to determine this. You will need to research the audit reports, budgets and other financial statements of the utility, the debt service schedules, the rate schedule, management policies and ordinances, talk to the staff and visit the facilities.*
 - *You will need to size up what's right and what needs improving in this operation. Try to be objective. Look at the operation like an outsider would.*
 - *It's wiser to do a self-evaluation and make your own adjustments rather than be in a position of having to react to a state or federal evaluation.*

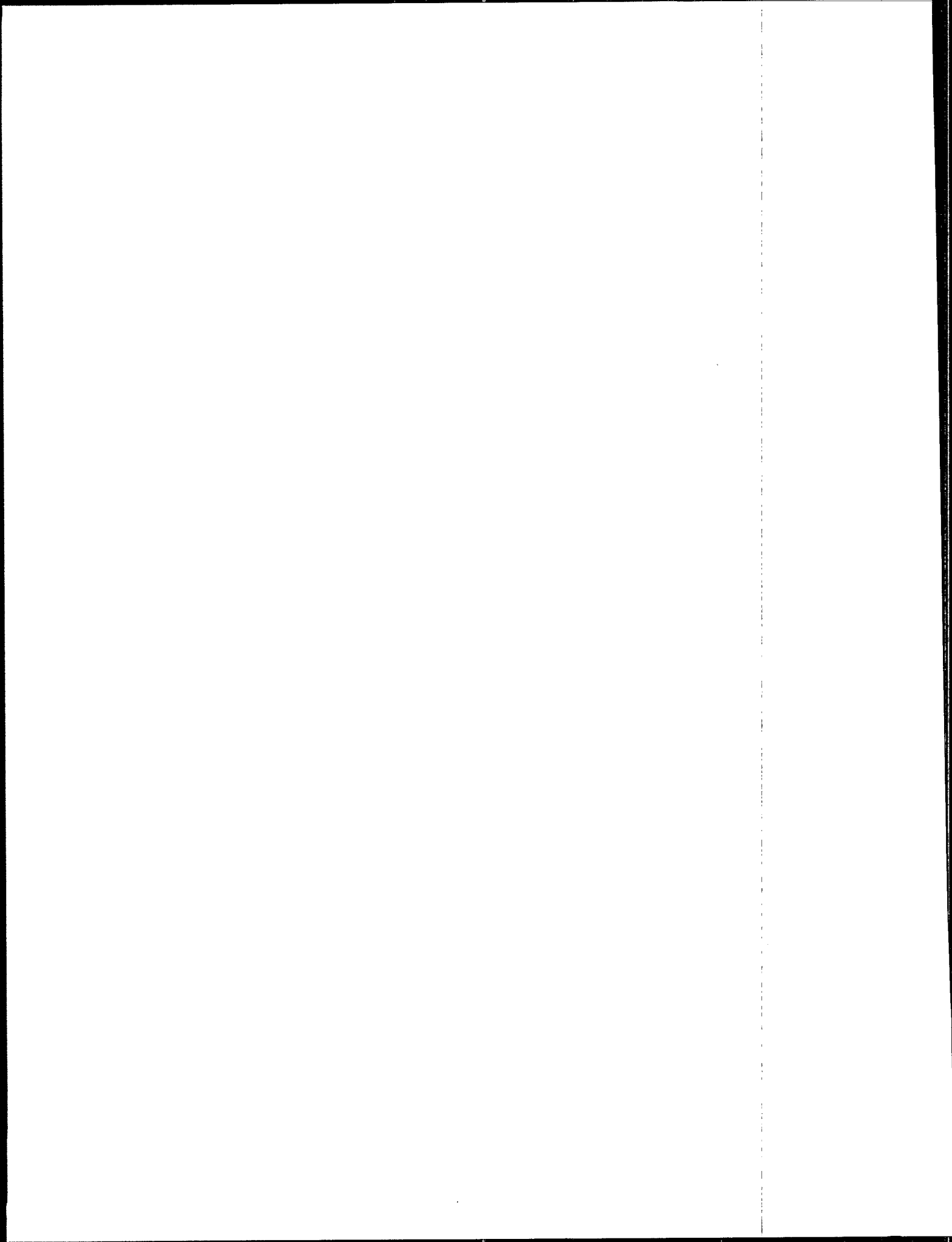


2. Recognize the Components of the User Service Charge System

- *Before beginning a user service charge system self-evaluation, you will have to learn the language of user charges. The previous discussion defined the major terms.*
- *Use Overhead # 28*
- *Think of the components as comprising a puzzle. Revenue pieces of the puzzle balance the expense pieces in such a way that the system operates in a positive cash flow. The object of water and wastewater enterprise fund operations is neither to incur profit or loss. These operations provide a public service.*
- *Besides learning the significance of terms like interest earnings and equipment replacement costs, you should understand how personnel turnover rate, surcharges, pretreatment ordinances and other factors influence the operations' financial management. We'll discuss these as we work through a case study in the next session.*
- *As part of their job duties, federal or state officials may do compliance evaluations, particularly if federal or state grants or loans were used to build facilities. We recommend you follow these steps in a self-evaluation as well.*

3. Prepare for Appointment with Financial Management Staff

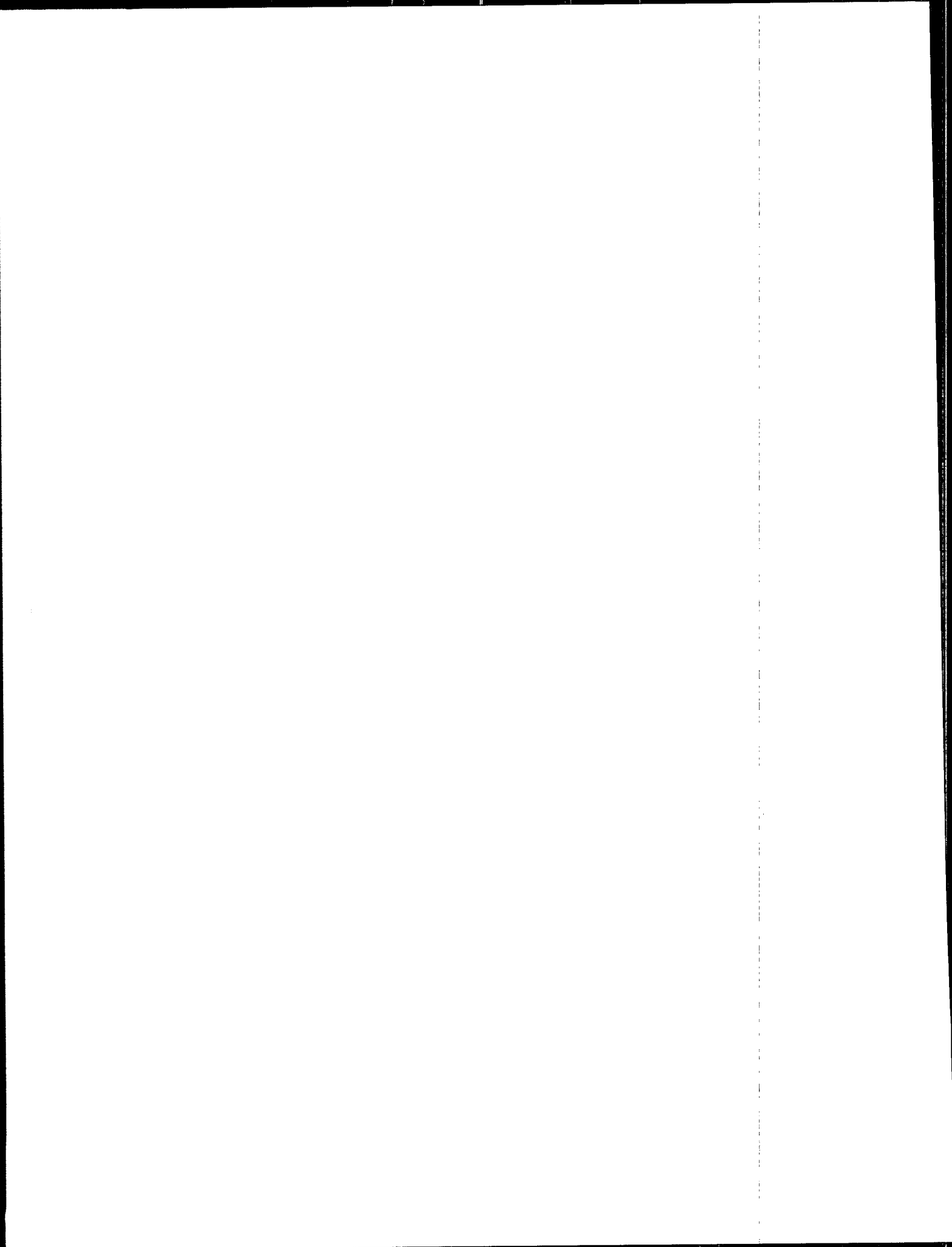
- *State and federal staff will set an appointment with the staff most familiar with the financial operation. It could be the water or wastewater utility manager or the community's finance director or comptroller. You will want to do the same for a self-evaluation.*



- *Use Overhead # 29*
- *Make a list of records to review during the appointment. For instance, you will need the most recent audit report, the current budget, current year-to-date revenues, current year-to-date expenses, the water/wastewater rate schedule, the sewer use ordinance, debt service schedules and contracts with other utilities. Allow sufficient time to prepare for the appointment.*
- *Ask your staff to have these records available. Allow them sufficient time to gather information. You will want to tour plant facilities, too.*
- *Set aside 2-4 hours for the entire appointment.*
- *The state or federal staff will probably follow-up with a letter stating the purpose of the upcoming visit and listing the documents they will need. They will send copies of their worksheets. We recommend you use the same worksheets for your self-evaluation.*
- *Use Overhead # 30*
- *Remind staff of the appointment one day before.*

4. **Decide on Accomplishments of the Review**

- *Whether you or the state conducts the evaluation, the purpose is to determine whether the operation is financially sound. In order to do that, you'll have to probe and gather specific clues to reach a conclusion.*



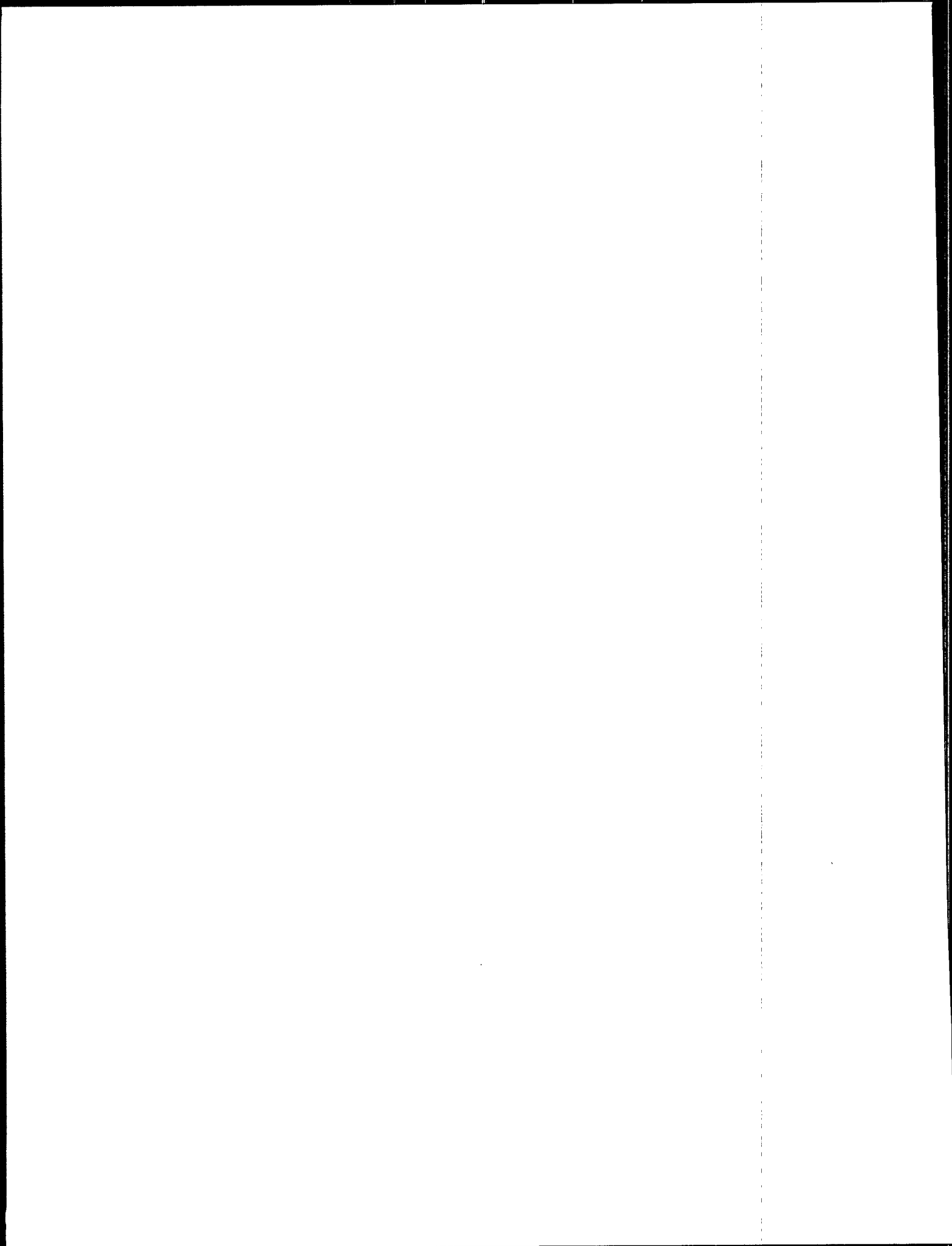
- *Know ahead of time what information to gather.*
- *The clues will be in writing - in financial statements, in management policies and in ordinances. Clues will also be visible in other ways - the cleanliness and state of repair of the treatment facility; the attitude and professionalism (or lack of it) of staff.*
- *A checklist is invaluable! We'll use one in the case study coming next.*

5. Clearly Understand The Problems

- *During the evaluation, don't be shy about asking probing questions; be sure you have a clear understanding of financial records and other documents.*
- *Be direct in pointing out the problems you see.*
- *Tell the staff what will be in your evaluation report. People do not like UNPLEASANT surprises.*

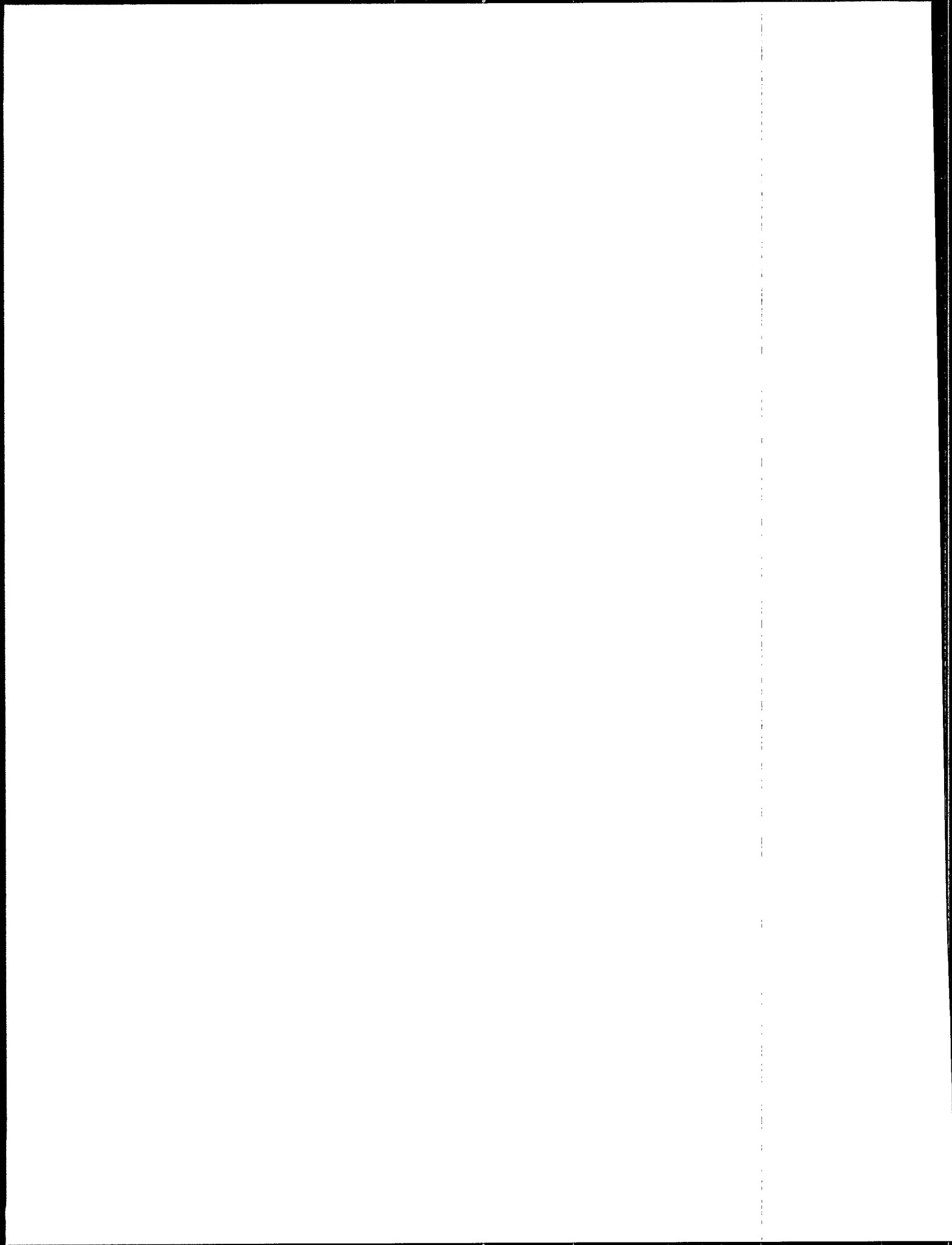
6. The Report

- *Use the checklists and worksheets you developed during the evaluation; information gained during conversations with staff; and what you observed at the treatment facility to develop a comprehensive report.*



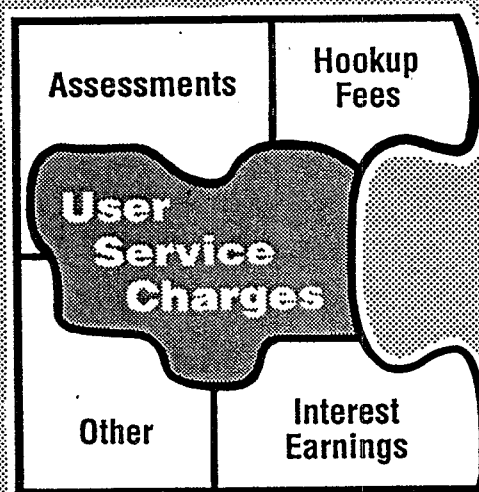
7. Follow-up on the Report

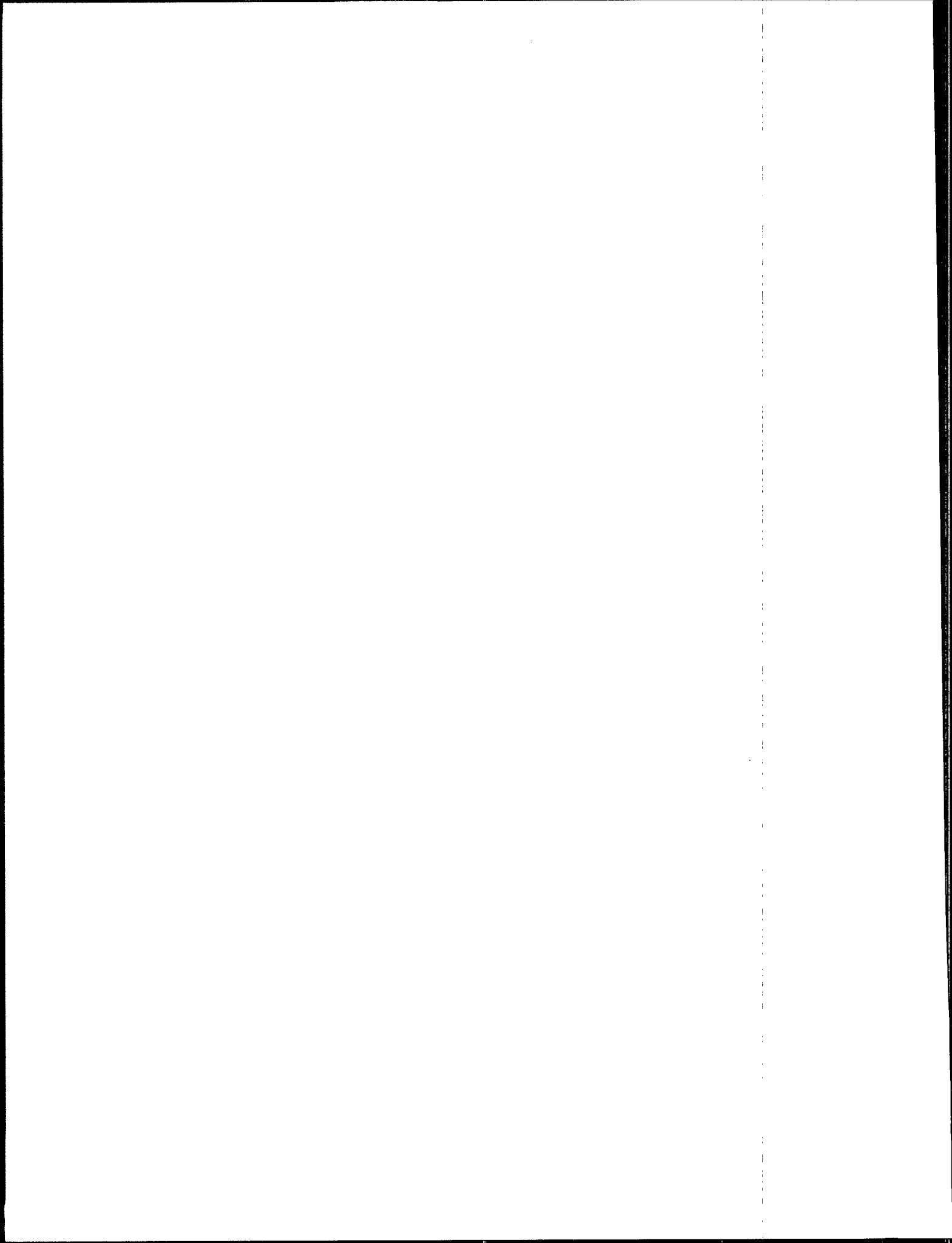
- *Follow-up on the requirements and recommendations in a self-evaluation report and ones received from the state. Don't drop the ball. Keep on top of the problem.*
- *Communities, like individuals, resist change. If your community doesn't make needed changes, enforcement action may be necessary to force better financial management.*



Revenues...

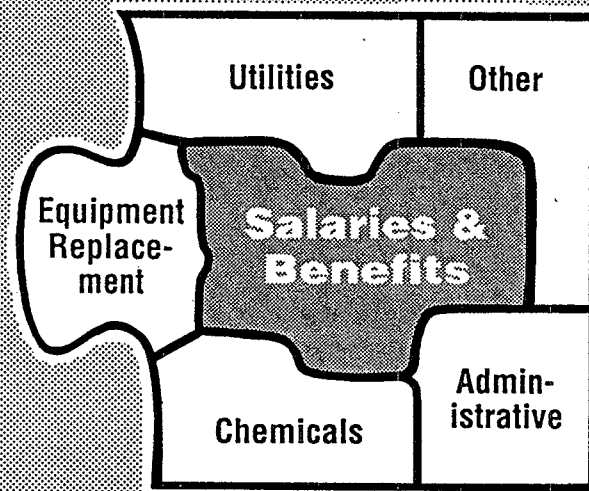
...are all monies received for wastewater operations. Get these figures from management, budgets and financial statements.

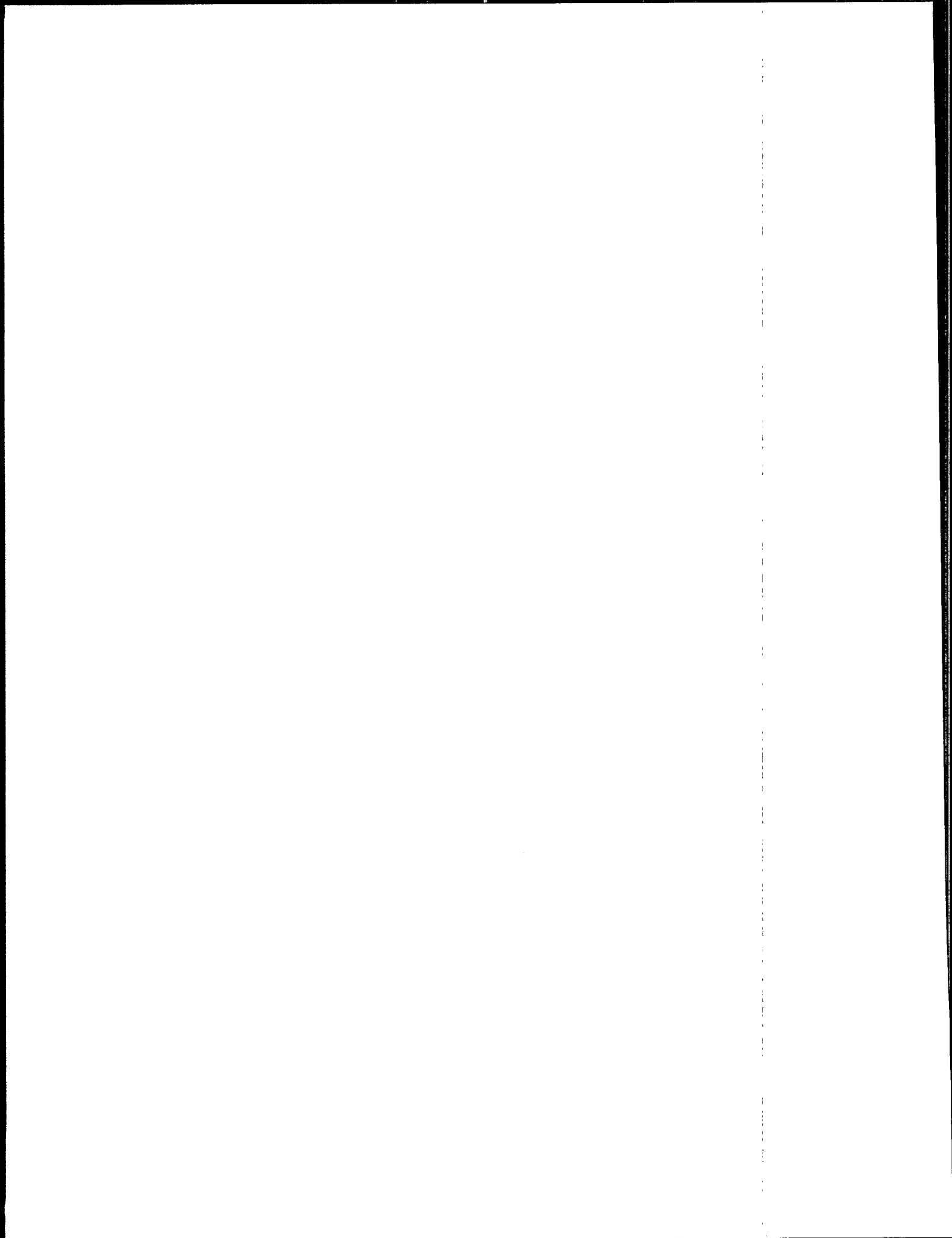




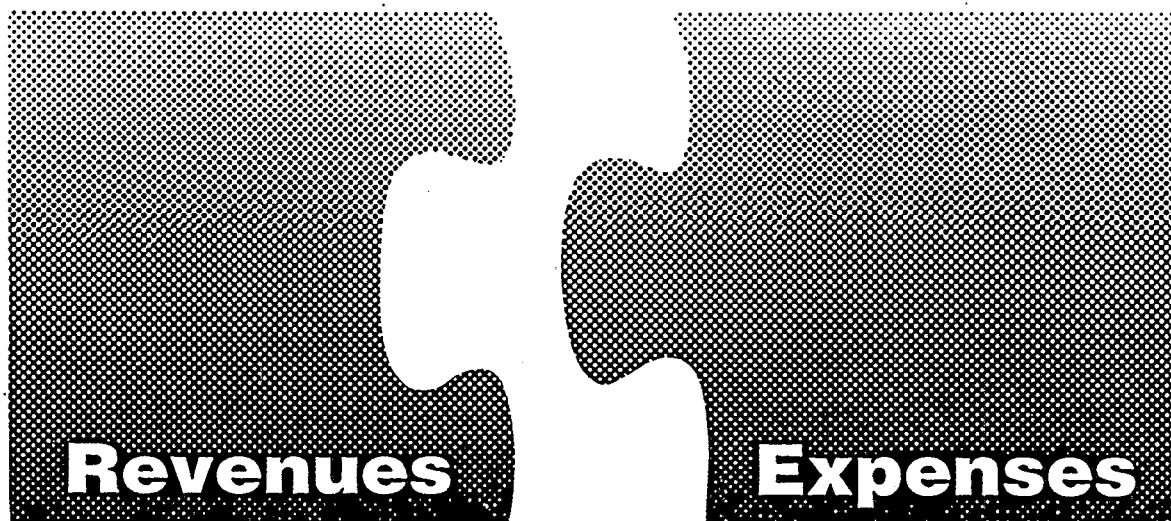
Expenses...

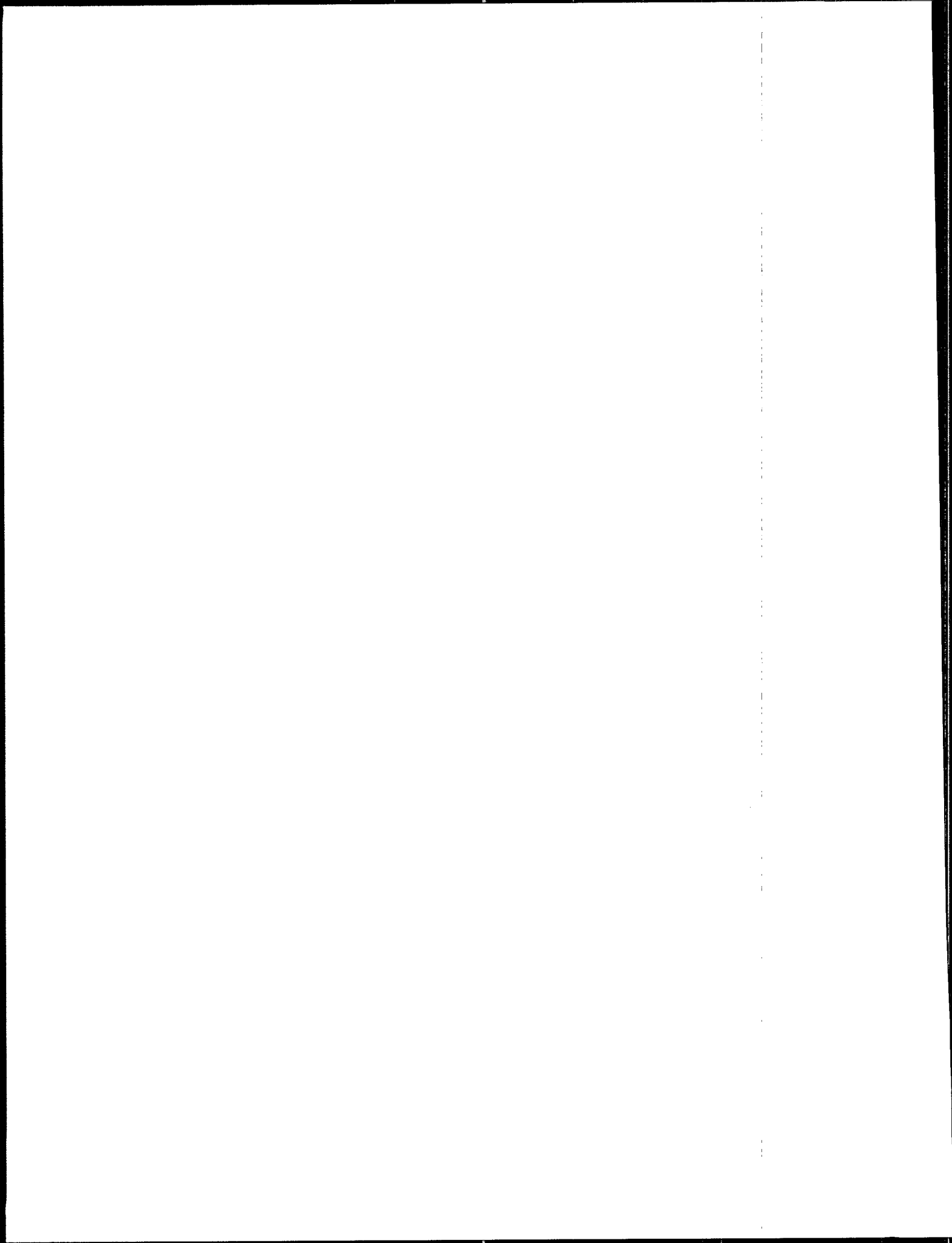
...are the costs of operating, maintaining, replacing equipment and paying debt service for a wastewater system.





The Big Picture





LIST THE DOCUMENTS YOU'LL NEED:

Most recent audit

Current budget

Current year-to-date revenues and expenses

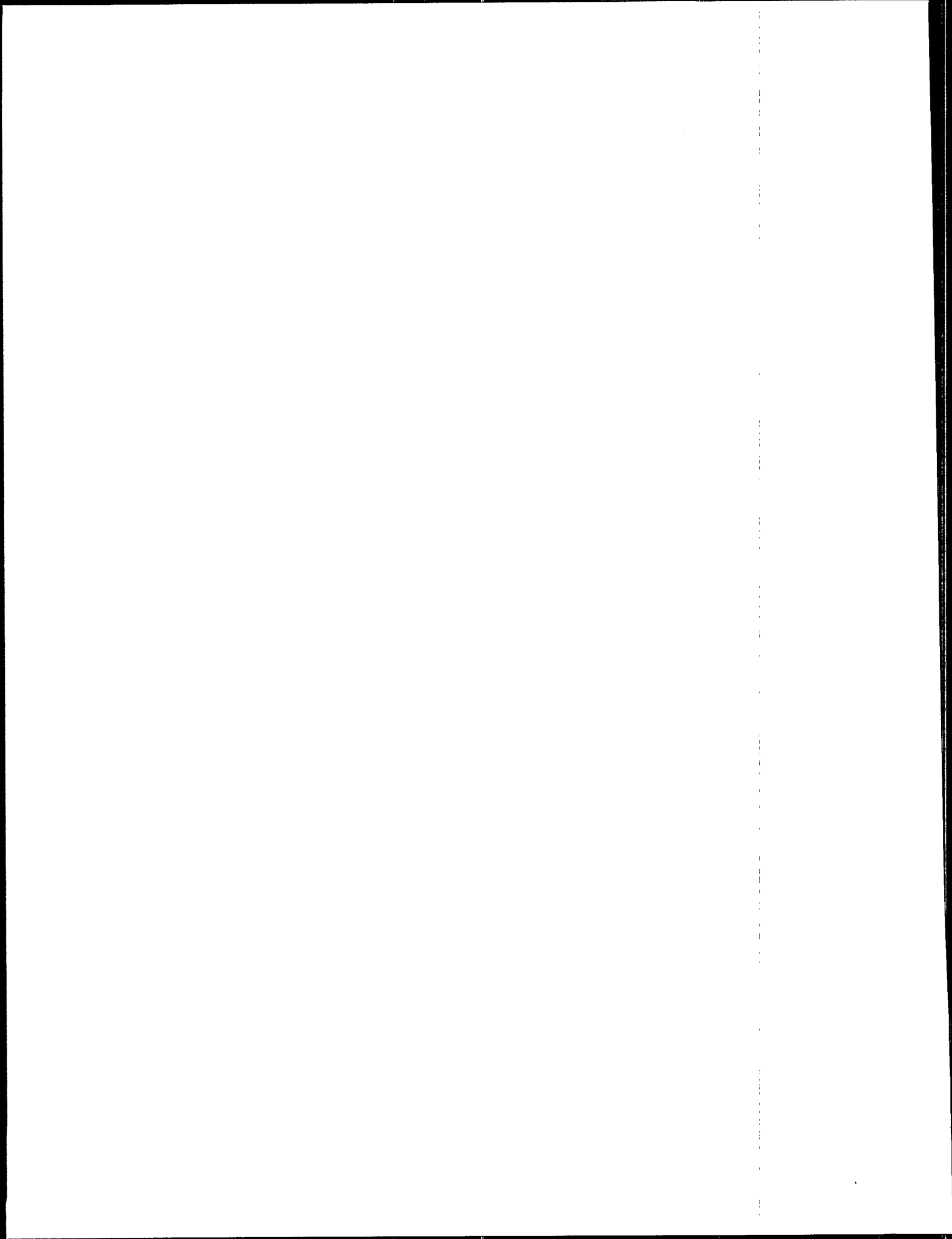
Rate schedule

Sewer use ordinance

Contracts with other utilities

Debt service schedules





SAMPLE LETTER

Initial letter to schedule an appointment for a user charge evaluation

(Date)

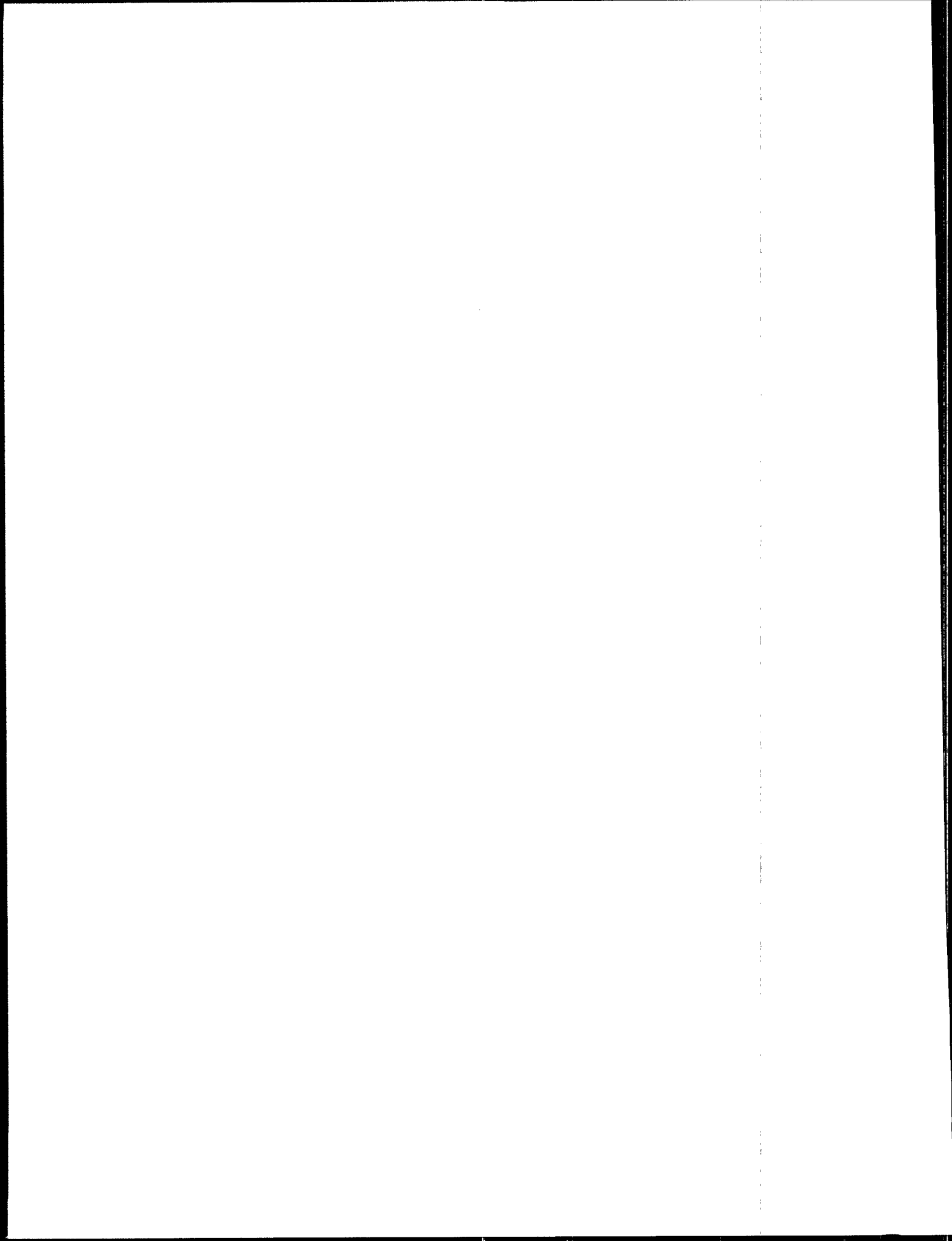
**Mr. James Sullivan
Finance Director
City of Anytown
100 S. Main St.
Anytown, USA**

Dear Mr. Sullivan:

This letter confirms our appointment for (time), (month) (date), (year), and lets you know what information I will need to obtain during our meeting.

As we discussed on the telephone today, I will be evaluating Anytown's wastewater user service charge system. I need to determine if it is generating sufficient revenues to cover operation, maintenance, equipment replacement and debt service costs. The evaluation will consist of (1) a meeting with you and your staff to discuss the utility's financial operations and (2) a brief tour of the wastewater facilities. These activities should take about four hours to complete.

FIGURE 30



I have enclosed a User Service Charge Worksheet I will use at the meeting. Please complete as much of this worksheet as you can before our meeting and be prepared to respond to the questions. I will also need to review the following information on your wastewater operation:

- **the most recent audited financial statement,**
- **the current budget,**
- **current year-to-date revenues,**
- **current year-to-date expenses,**
- **the wastewater rate schedule and ordinance (or resolution), and**
- **the sewer use and pretreatment ordinances.**

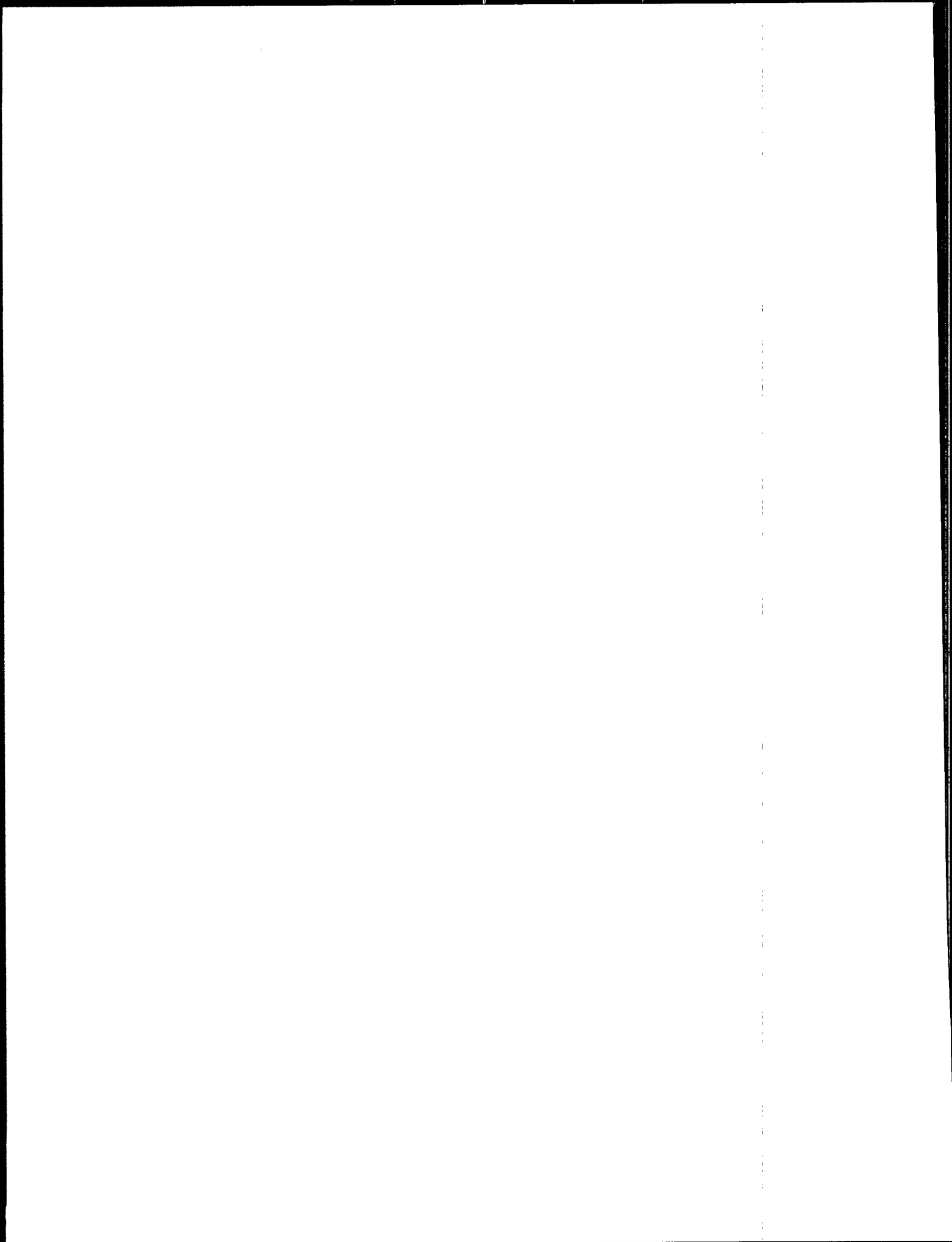
Please call me at (number) with any questions you may have prior to our meeting.

Sincerely,

**Anne Taylor
Utility Board Manager**

enclosure

FIGURE 30A



IV.D. USER SERVICE CHARGE WORKSHEETS

- * Management/Operating Policies/Compliance**

Worksheet 1

- * Financial Information**

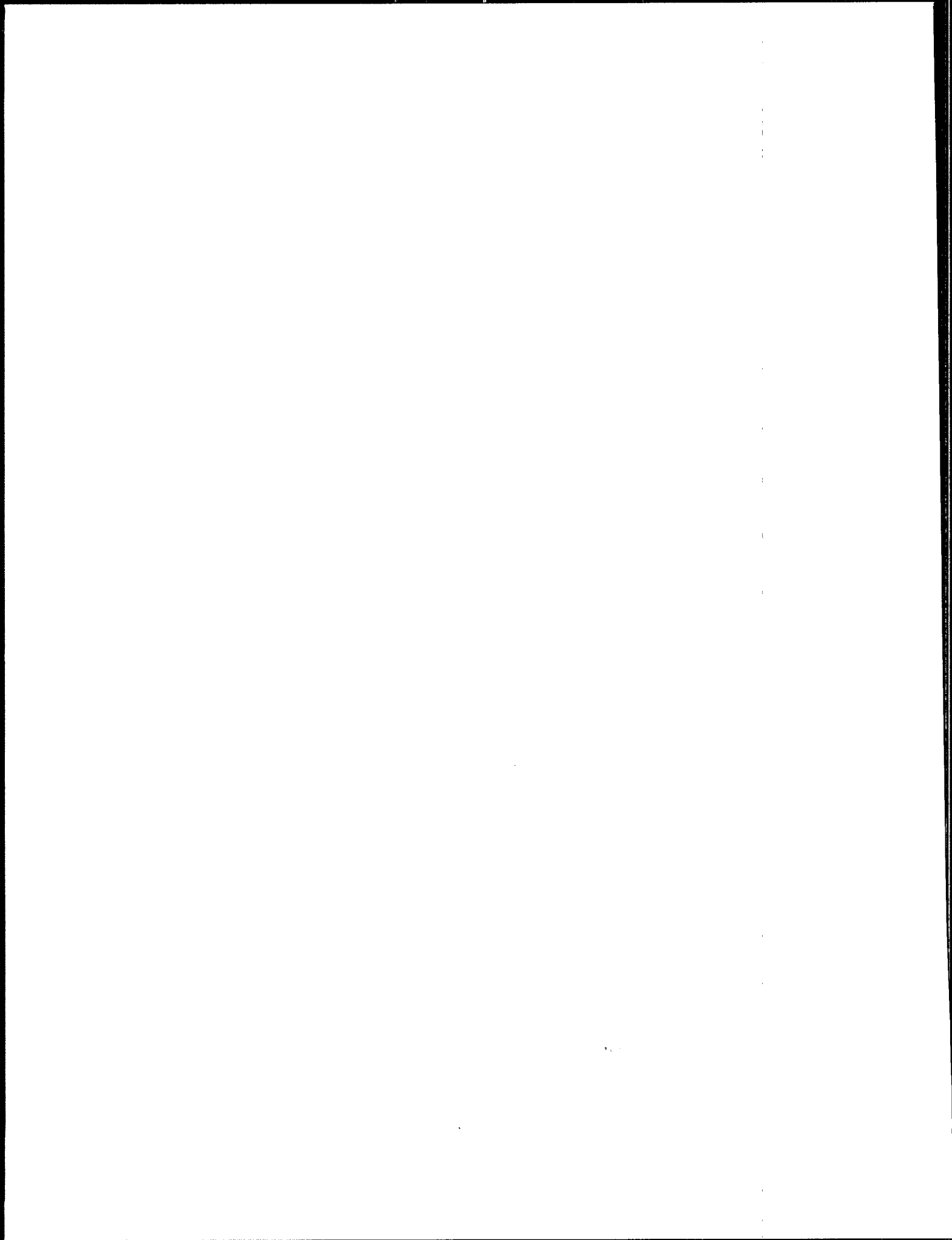
Worksheets 2-4

- * User Service Charge System**

Worksheets 5-6

- * Wastewater Facility Tour**

Worksheet 7

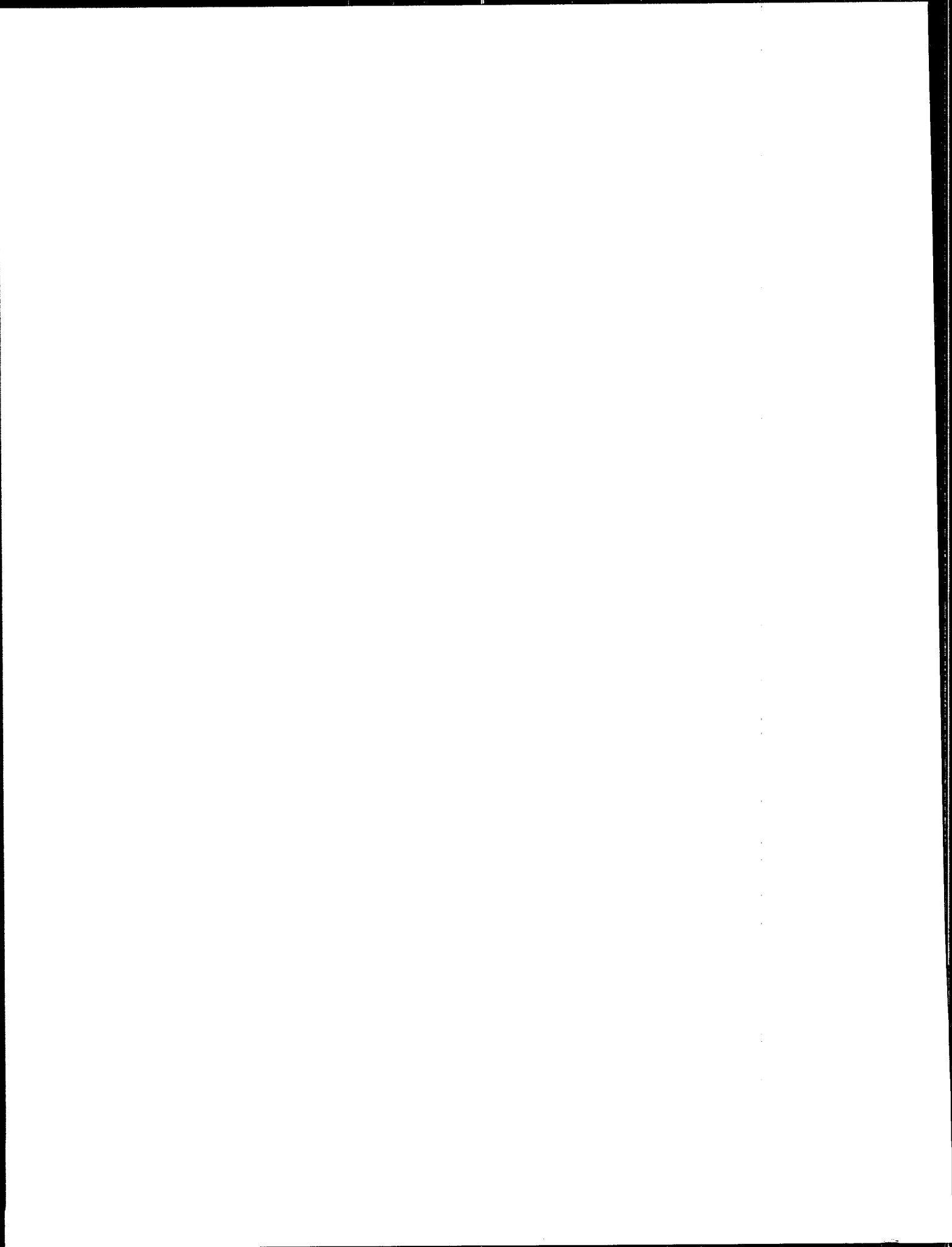


IV.D. USER SERVICE CHARGE WORKSHEETS

* Management/Operating Policies/Compliance

Worksheet 1

- *Use Overhead # 31*
- *Enforcement Activity*
- *City officials need to be familiar with the compliance status of the utility operation. Talk to managers and superintendents and check correspondence files to determine if the utility has any outstanding permit violations or compliance problems. If violations have occurred within the last 12 months, find out what they were. Are they recurring? How were they solved? Find out when the last regulatory inspection was performed and the outcome.*
- *Talk with your staff. Discuss any violations of the NPDES permit or any drinking water violations within the last 12 months. Find out the nature of the violations. Were they recurring? Have they been solved? How serious were the violations? Have fines been levied?*
- *Did insufficient operating revenues contribute to the violations? Beware! Permit violations are an earmark of poor management.*



- Accounting Reports

- Find out whether the utility receives monthly accounting reports for wastewater revenues and expenses. Look at them. (Place an example of a monthly accounting report in the back of the room for participants to look at during breaks.)

- Written Policies and Procedures

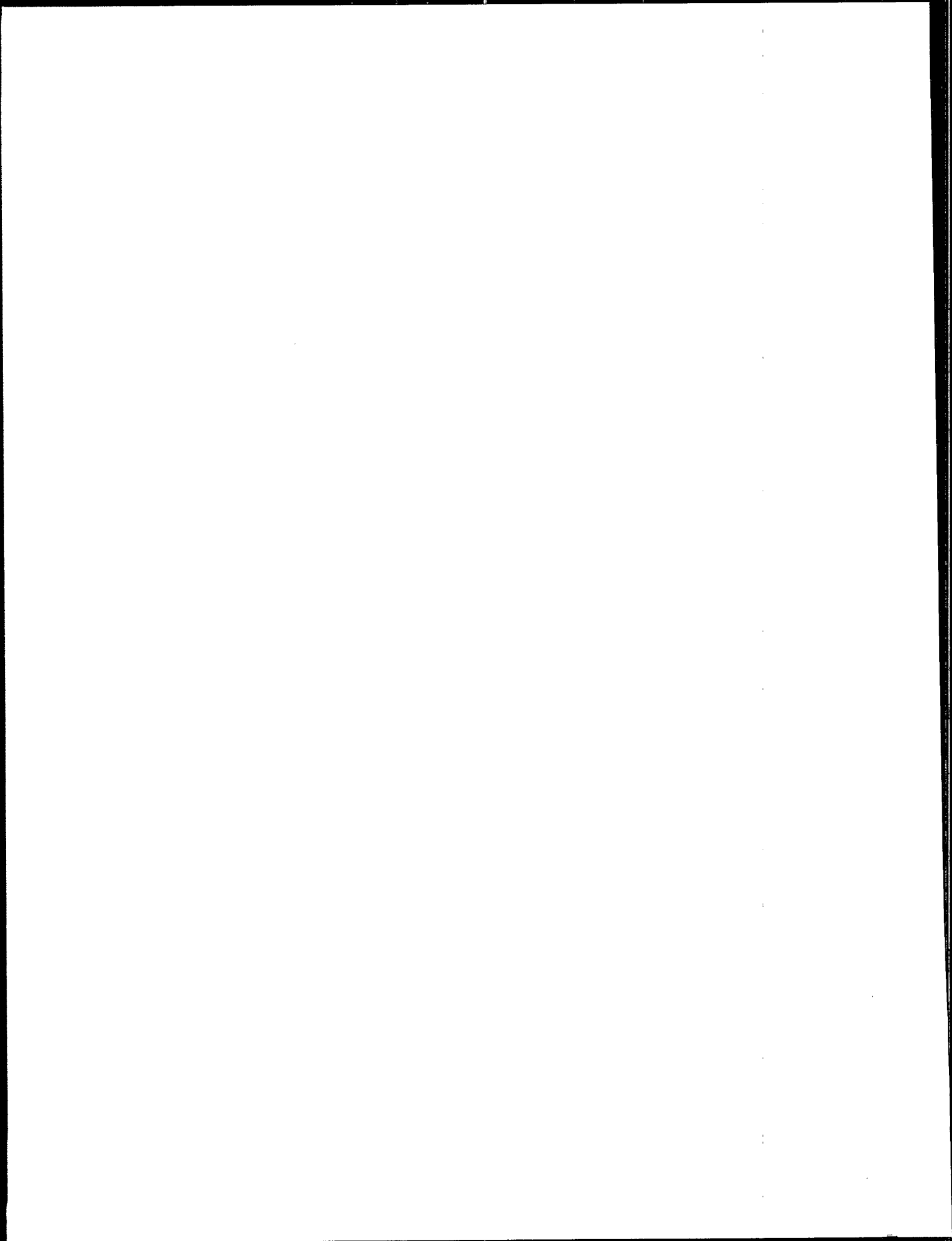
- Find out whether the utility has a sewer use or pretreatment ordinance. Are there written policies and procedures for collecting delinquent bills, service cut-off, meter testing, line extensions and so forth. Again, ask to see them. Find out how long since they were updated.

- Organizational Structure

- Look at the system's organizational structure. Is there a direct line of authority and responsibility?
- Think of the problem situations like these present: (1) A superintendent is responsible for keeping enough chemicals on hand to operate the treatment facility, but he does not have the authority to originate purchase orders for those chemicals; (2) A manager is responsible for operating the treatment facility, but the manager does not have authority to conduct performance evaluations or decide on disciplinary actions and merit increases for the employees.

- Management Climate

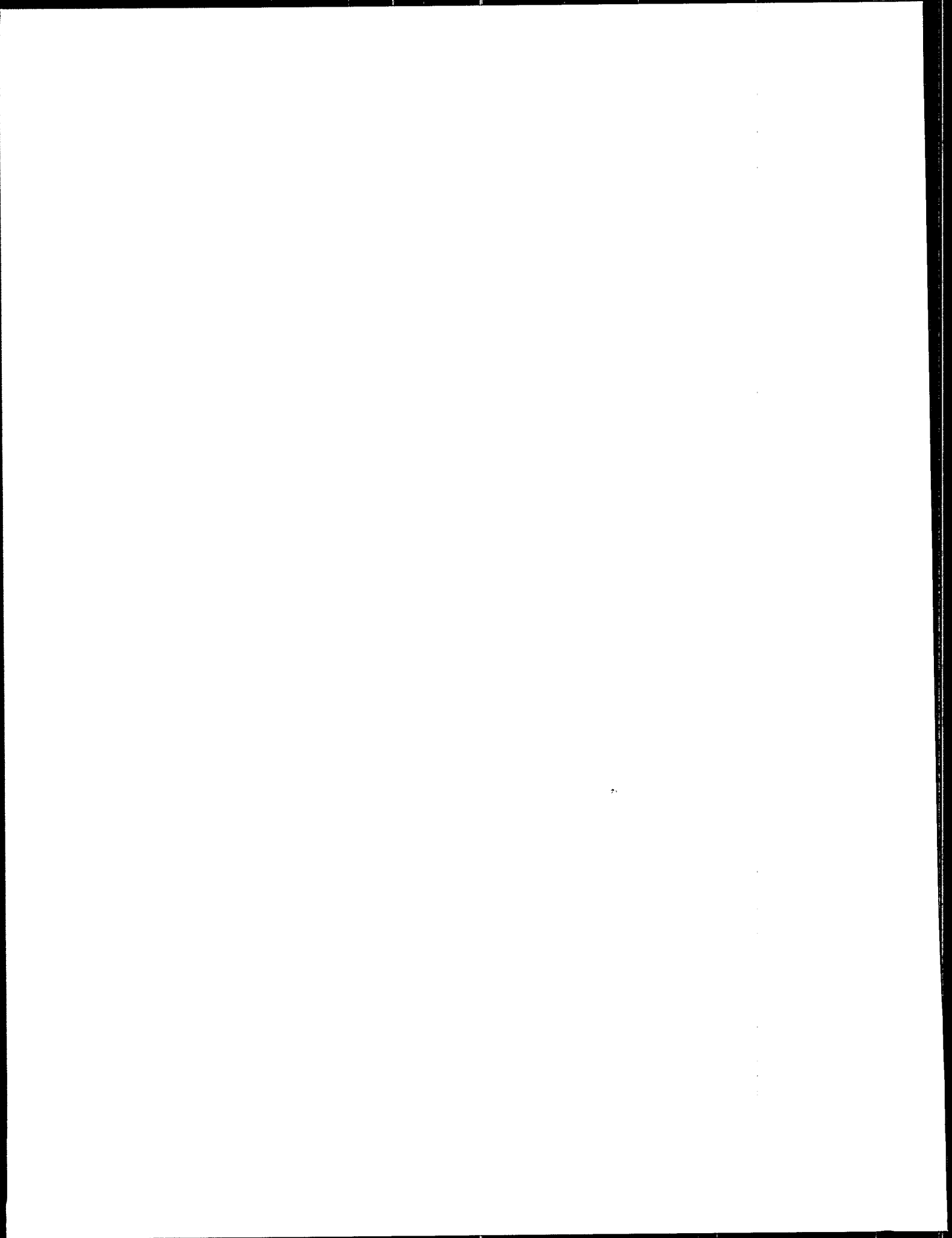
- What kind of work environment does management foster? Are workers generally satisfied? Does management delegate? What is the turnover rate? Do people like working here? Why? Why not? Be objective!



* **Financial Information**

Worksheets 2-4

- *First, look for separate budgets for revenues and expenses. The budget should show separate line items. Of course the water and wastewater budgets should be separate from other governmental utility budgets like garbage disposal.*
- *Use overhead # 32*
- *What are the total annual budgeted REVENUES for the wastewater operation?*
- *What are the total annual budgeted EXPENSES for the wastewater operation?*
- *Use overhead # 33*
- *Next, what are the actual revenues to date?*
- *How do they compare with budgeted revenues to date? You will need the latest revenues report for this comparison.*
- *What are actual expenses to date? How do they compare with budgeted expenses? You will need the latest expense report for this comparison.*
- *Simply subtract total operating expenses from total revenues to determine if the utility operation has a cash flow problem.*
- *Does the utility have a plan (or reserves) to cover a revenue deficit?*
- *Use overhead # 34*
- *The utility should review user service charges annually and adjust them to reflect expenses. Do they?*
- *An equipment replacement fund is very important. Does your utility have a line item in your budget for this expense?*

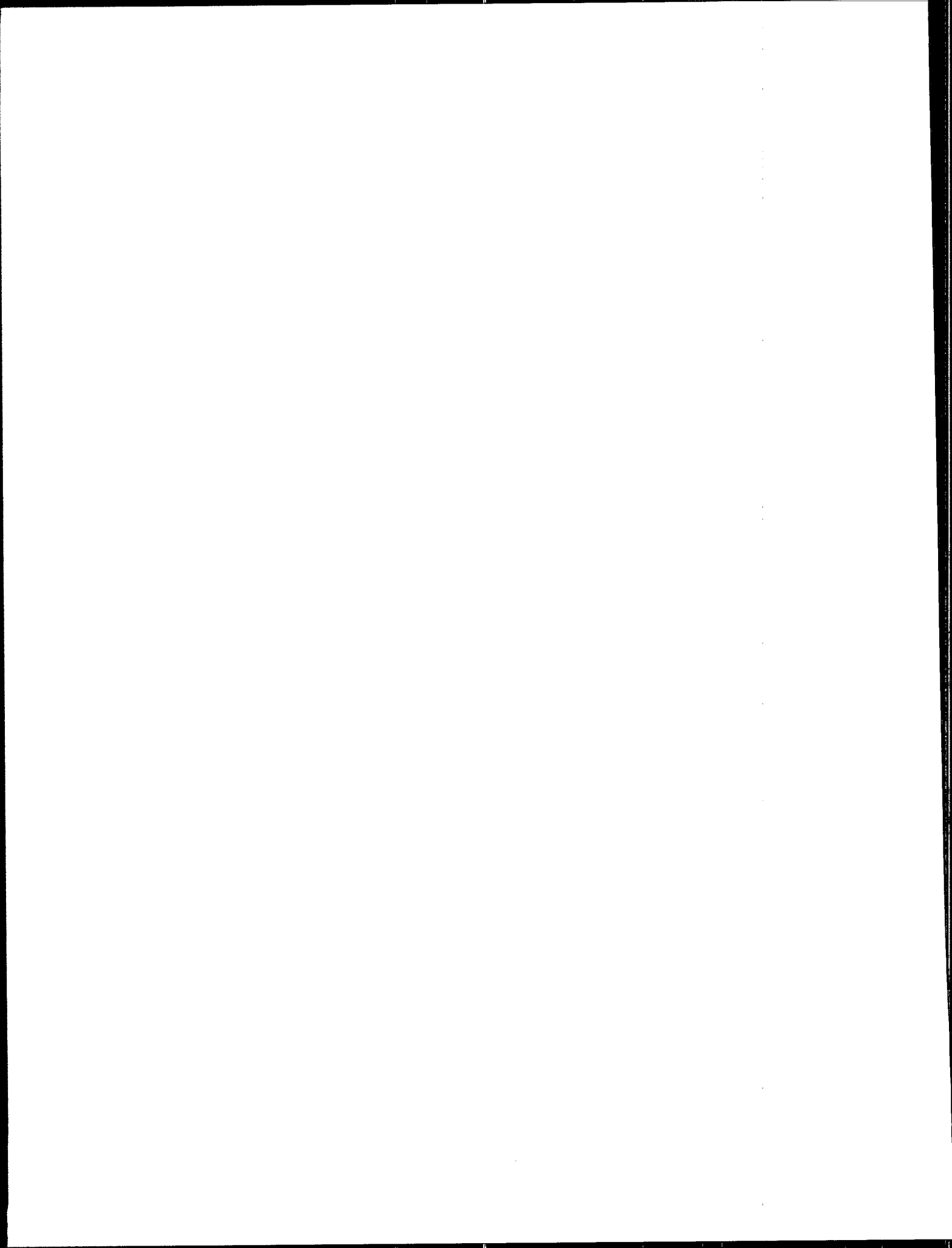


- *What percentage of OM&R funds are set aside for equipment replacement?*
- *ERF (%) = ERF Costs/(Total Operating Expenses) - (P&I Payments) X 100%*
- *Finally, does a certified public accounting firm review the utility accounts?*

* **User Service Charge System**

Worksheets 5-6

- *Take a close look at the rate schedule, sewer use ordinance and policy manual.*
- *Use Overhead # 35*
- *Does the rate schedule specify a minimum charge? The minimum charge should cover billing costs only (cost of preparing and mailing the bill).*
- *Does the rate schedule specify a uniform rate based on volume of usage?*
- *Overhead # 36*
- *Are the costs of collection and treatment shared proportionally by each user group?*
- *Are users notified annually of the rates? How?*
- *Find out how the costs for treating I/I are covered. Are they distributed proportionally to each user group?*
- *Compute the treatment rate cost.*
- *How does the utility determine usage? Water meters? Other?*

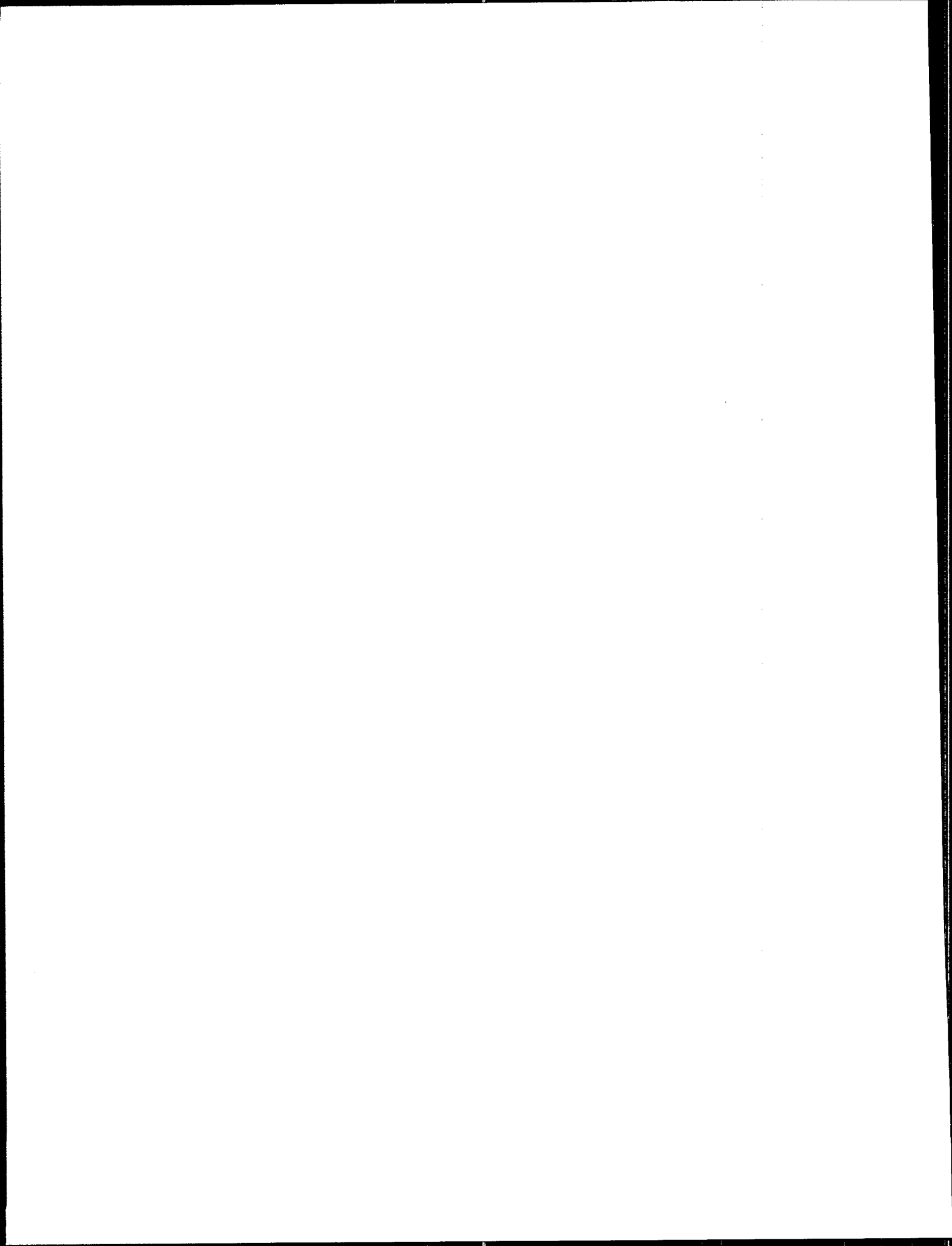


- *Overhead # 37*
- *Does the Sewer Use Ordinance and rate schedule provide for surcharges?*
- *How does the utility determine surcharges? Based on what measurement?*
- *What does a typical customer in this community pay per month?*
- *Find whether the bills are separated by service. Is the water bill separated from the wastewater? the garbage pick-up?*
- *Are there contractual agreements between the treating utility and other political jurisdictions served by the utility? For example: do users outside the utility's political boundary pay the same rate as inside users? Do those outside jurisdictions have proportional rate schedules?*
- *The above questions are being asked of our case study community. (In response to the questions, discuss possible answers. Encourage participation from the audience and fill in the worksheet pages as the questions are discussed.)*

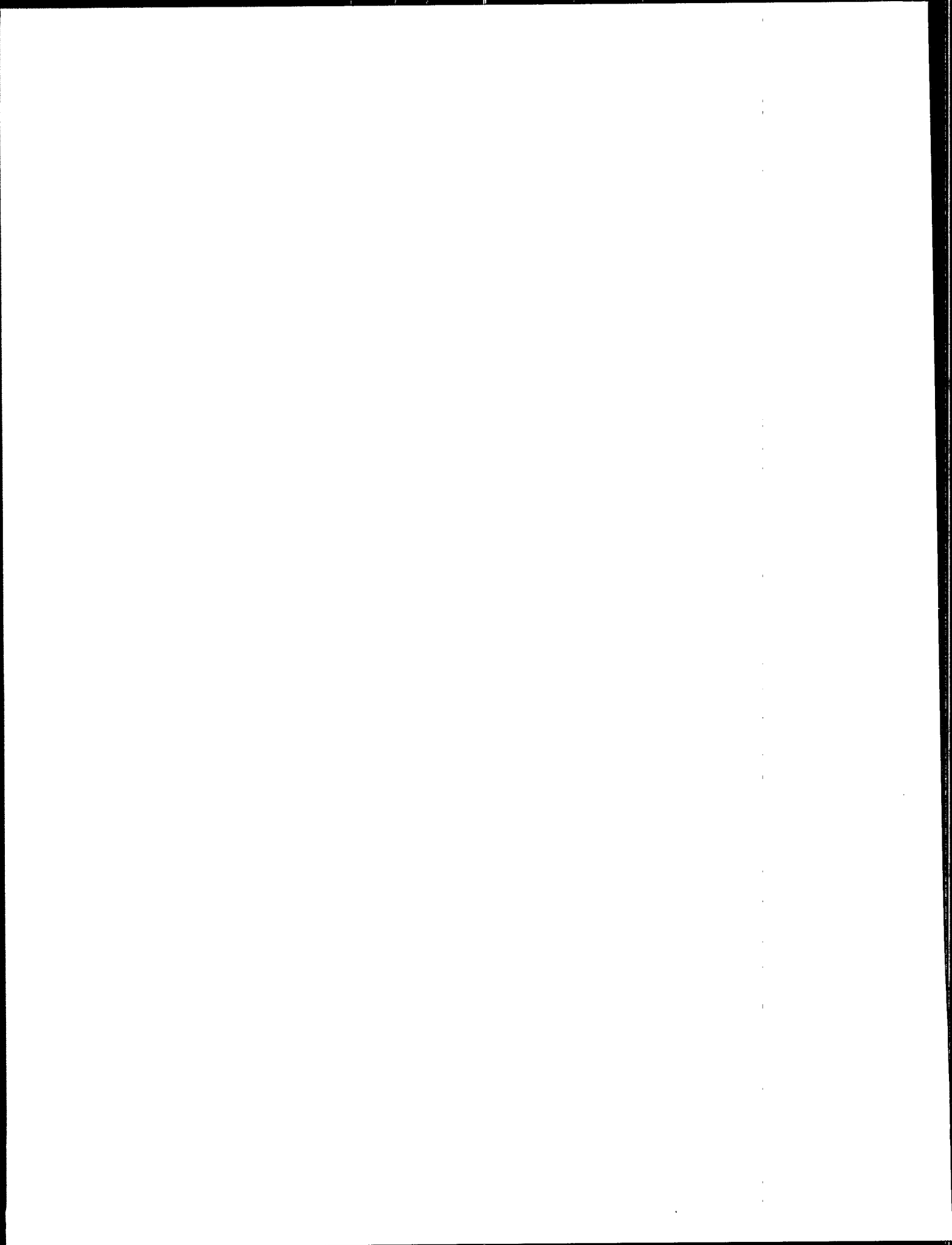
* **Wastewater Facility Tour**

Worksheet 7

- *Use Overhead # 38 to show Worksheet 7*
- *Tour the treatment facility, starting at the head of the plant.*
- *As you walk through, notice the state of repair, maintenance, and cleanliness. Is the concrete cracking? Do handrails need painting? Are pumps leaking? Is the chemical feed area neat? Is the fan working in the chlorine feed room? How are the treatment processes performing? Are the operators knowledgeable of the treatment processes?*



- *Is the laboratory clean and organized?*
- *Is the facility adequately staffed?*
- *Are the operators certified? Do they receive training periodically?*
- *Summary*
- *At the end of the evaluation, (whether this is a self-evaluation or a regulatory evaluation), summarize.*
 - (a) *List the findings*
 - (b) *Outline an action plan for solving problems*
 - (c) *Follow-up*
 - (d) *Communicate*



Utility/Community Name: _____

Name of Local Contact: _____

Telephone Number: (_____) _____ Date _____

User Service Charge Worksheet

Management/Operating Policies/Compliance

1. Describe any NPDES permit violation(s) which occurred within the last 12 months and the reason(s) for the violation(s).

2. Did insufficient operating revenues contribute to the NPDES violation(s)?

Yes

No

3. Does the utility receive monthly accounting reports for wastewater revenues and expenses?

Yes

No

4. Does the utility have a pretreatment ordinance?

Yes

No

5. Does the organizational structure of the wastewater utility present any operational problems?

Yes

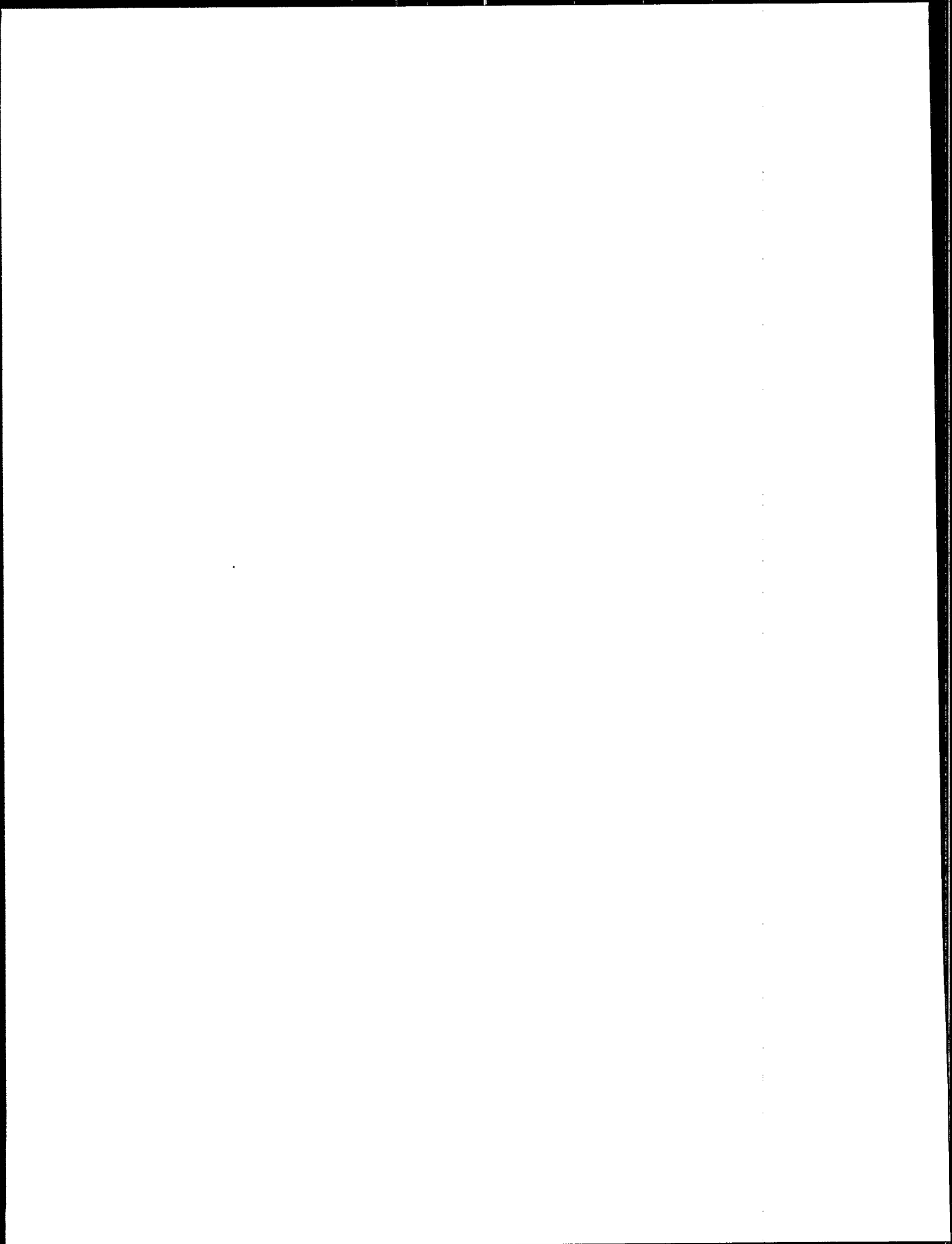
No

6. What is the annual personnel turnover rate?

7. Are the procedures for collecting delinquent wastewater bills adequate?

Yes

No



Financial Information

1. Does the wastewater budget show revenues and expenses by line item? (Note: The wastewater budget should be separate from other governmental utility budgets like water, garbage disposal, etc.)

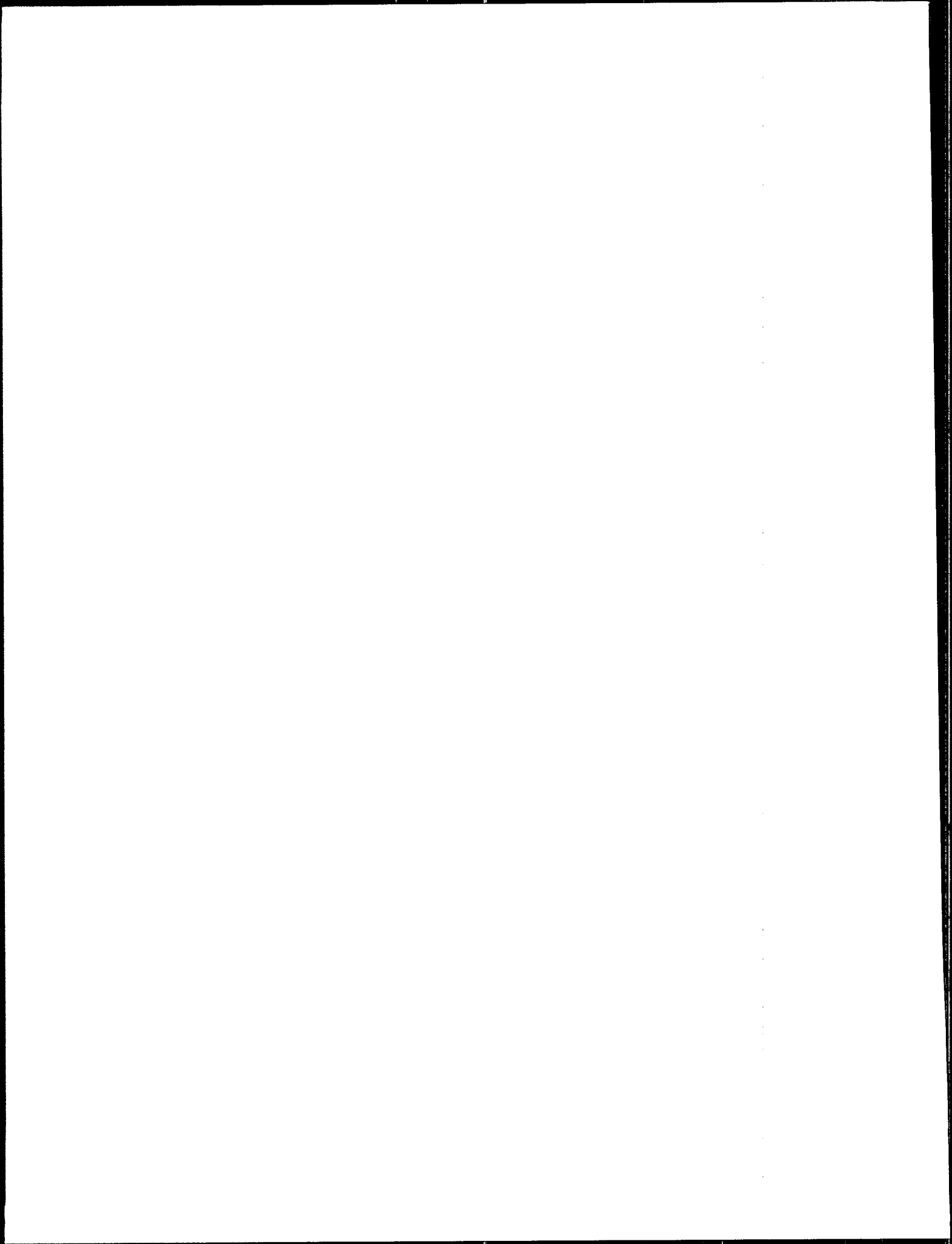
Yes ☐No ☐

2. What are the total annual budgeted revenues for the wastewater operation?

TOTAL BUDGETED REVENUES	
	\$
User service charges	
Hookup/impact fees	
Taxes/assessments	
Interest earnings	
Other	
<i>Total Budgeted Revenues</i>	

3. What are the total annual budgeted expenses for the wastewater operation?

TOTAL BUDGETED OPERATING EXPENSES	
	\$
Salaries and benefits	
Utilities	
Equipment replacement fund	
Chemicals	
Supplies and parts	
Contract services	
Administration	
Principal and interest payments	
Other	
<i>Total Budgeted Operating Expenses</i>	



4. What are actual revenues to date? How do they compare with budgeted revenues to date?

BUDGETED REVENUES VS. ACTUAL		
	\$ Budgeted	\$ Actual
<i>Total Revenues</i>		

5. What are actual expenses to date? How do they compare with budgeted expenses to date?

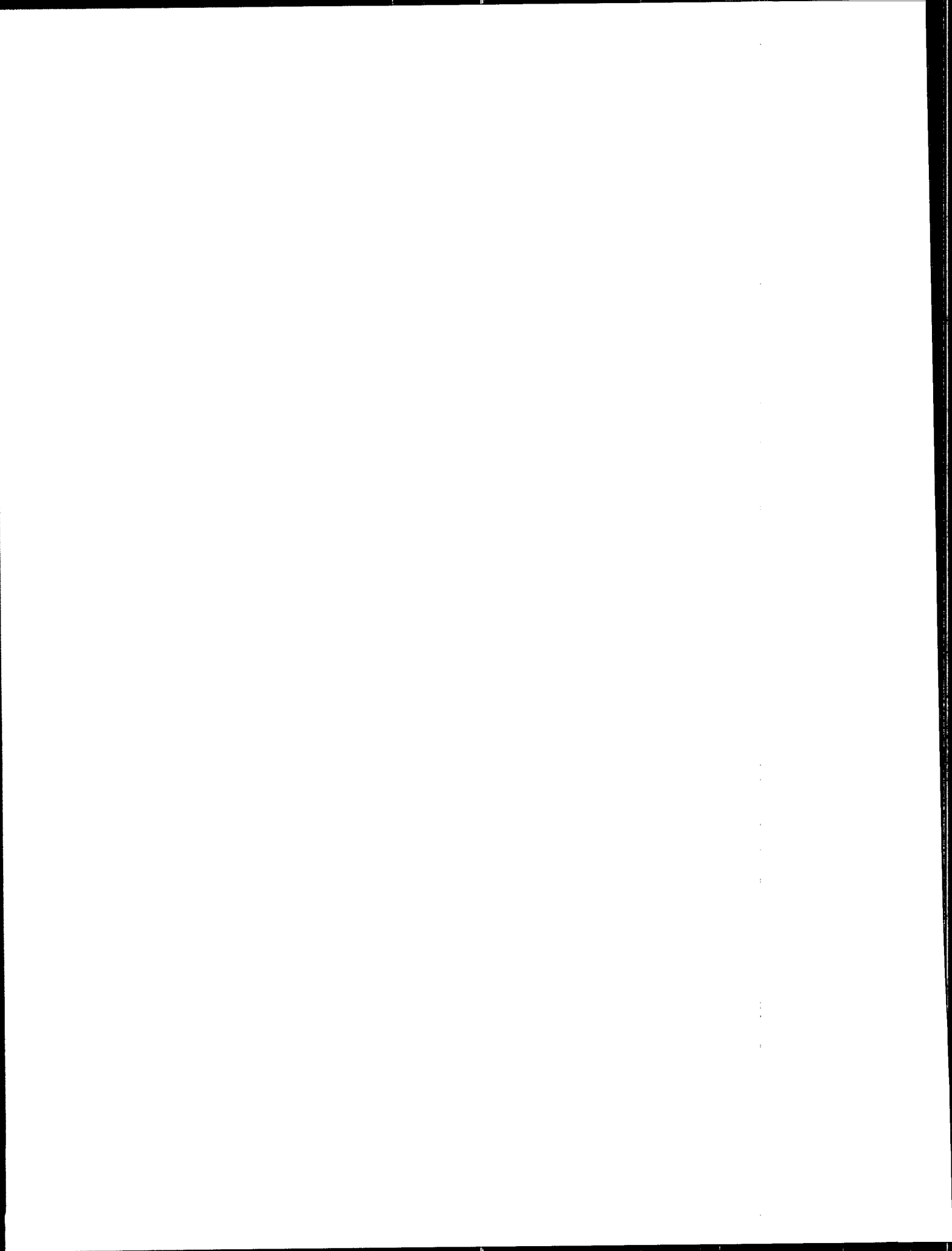
BUDGETED EXPENSES VS. ACTUAL		
	\$ Budgeted	\$ Actual
<i>Total Operating Expenses</i>		

6. Does the wastewater utility show a cash flow problem?

Yes ☐ No ☐

ACTUAL REVENUES & EXPENSES	
	\$
<i>Total Revenues</i>	
<i>Total Operating Expenses (-)</i>	
<i>Cash Available</i>	

7. How does the utility cover a revenue deficit?



Worksheet-4

8. Does the utility review user service charges and adjust them annually to reflect budgeted or actual expenses?

Yes ☐**No** ☐

9. Does the utility have an equipment replacement fund (ERF)?

Yes ☐**No** ☐

10. What percentage of operation, maintenance and equipment replacement funds are set aside for equipment replacement?

Equipment

Replacement

Fund

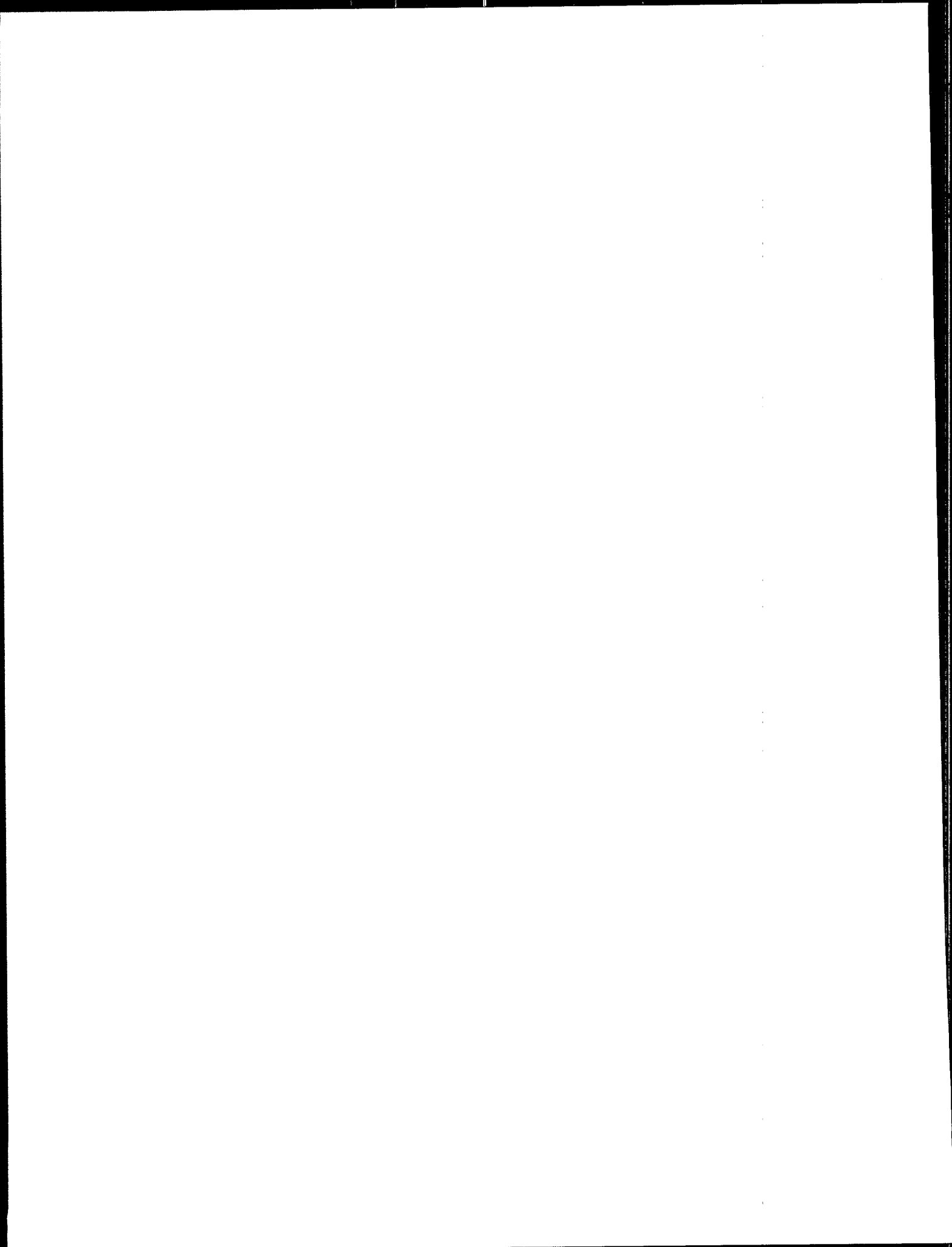
(ERF) (%)

$$= \frac{\text{ERF Costs}}{(\text{Total Operating Expenses}) - (\text{P\&I Payments})} \times 100\%$$

ERF (%) =

11. Does a certified public accounting firm review the utility accounts?

Yes ☐**No** ☐



User Service Charge System

1. Does the utility distribute the wastewater collection and treatment costs proportionally to each user, user class or political jurisdiction?

Yes ☐ No ☐

2. Does the utility use a sewer use ordinance that incorporates a proportionate wastewater rate schedule? (Attach a copy.)

Yes ☐ No ☐

3. Does the utility distribute the I/I costs proportionally to each user, user class or political jurisdiction?

Yes ☐ No ☐

4. Does the rate schedule specify a uniform rate for wastewater treatment based on the volume of usage?

Rate = \$ /1000 gal

Yes ☐ No ☐

5. Does the rate schedule provide for a minimum charge?

Yes ☐ No ☐

6. What is the minimum charge?

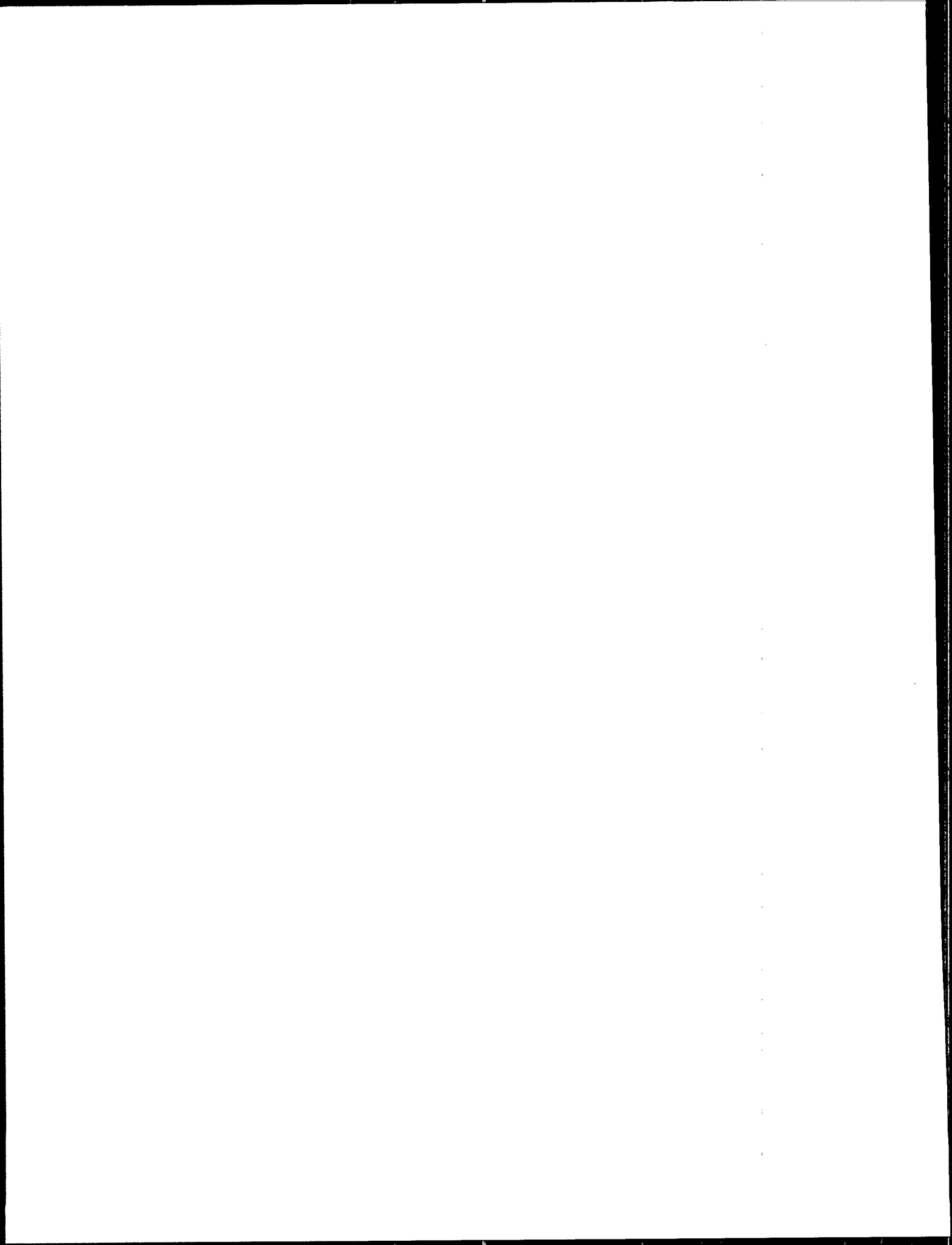
\$

7. Are customers notified annually of the wastewater rates?

Yes ☐ No ☐

8. What is the actual total operation, maintenance, equipment replacement and debt service costs per 1000 gallons of wastewater treated by the utility?

Treatment Rate =
$$\frac{\text{OM\&R} + \text{Debt Service Costs}}{\text{Total Flow}} = \$ \text{ } / 1000 \text{ gal}$$



9. How does the utility determine wastewater user fees? (Check one)

Water meter readings?

☐

Equivalent dwelling unit?

☐

Other? (Specify)

☐

10. Does the rate schedule specify surcharges for high-strength wastes?

Yes

☐

No

☐

11. How does the utility determine surcharges?

12. What is the average annual wastewater bill for a typical residential user?

\$

13. Are users billed separately for wastewater services?

Yes

☐

No

☐

14. Do all political jurisdictions served by the utility have a sewer use ordinance which incorporates a proportional wastewater rate schedule?

Yes

☐

No

☐

15. Do users outside the utility's political boundary pay the same rate as inside users?

Yes

☐

No

☐

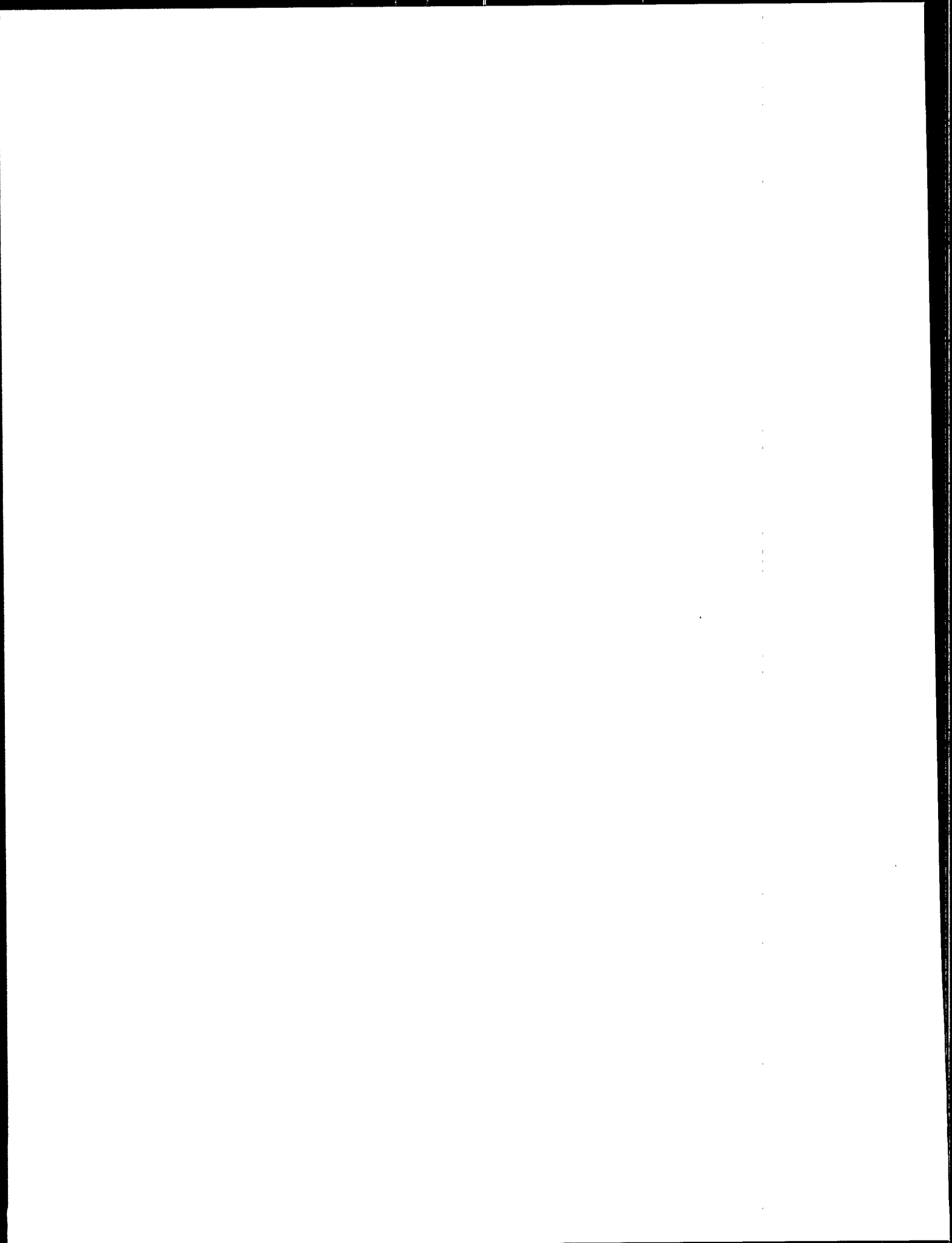
16. Do all serviced political jurisdictions meet the same user service charge system conditions as the wastewater treating utility? (If No, describe.)

Yes

☐

No

☐



**ORDINANCE NO.
SEWER USE ORDINANCE**

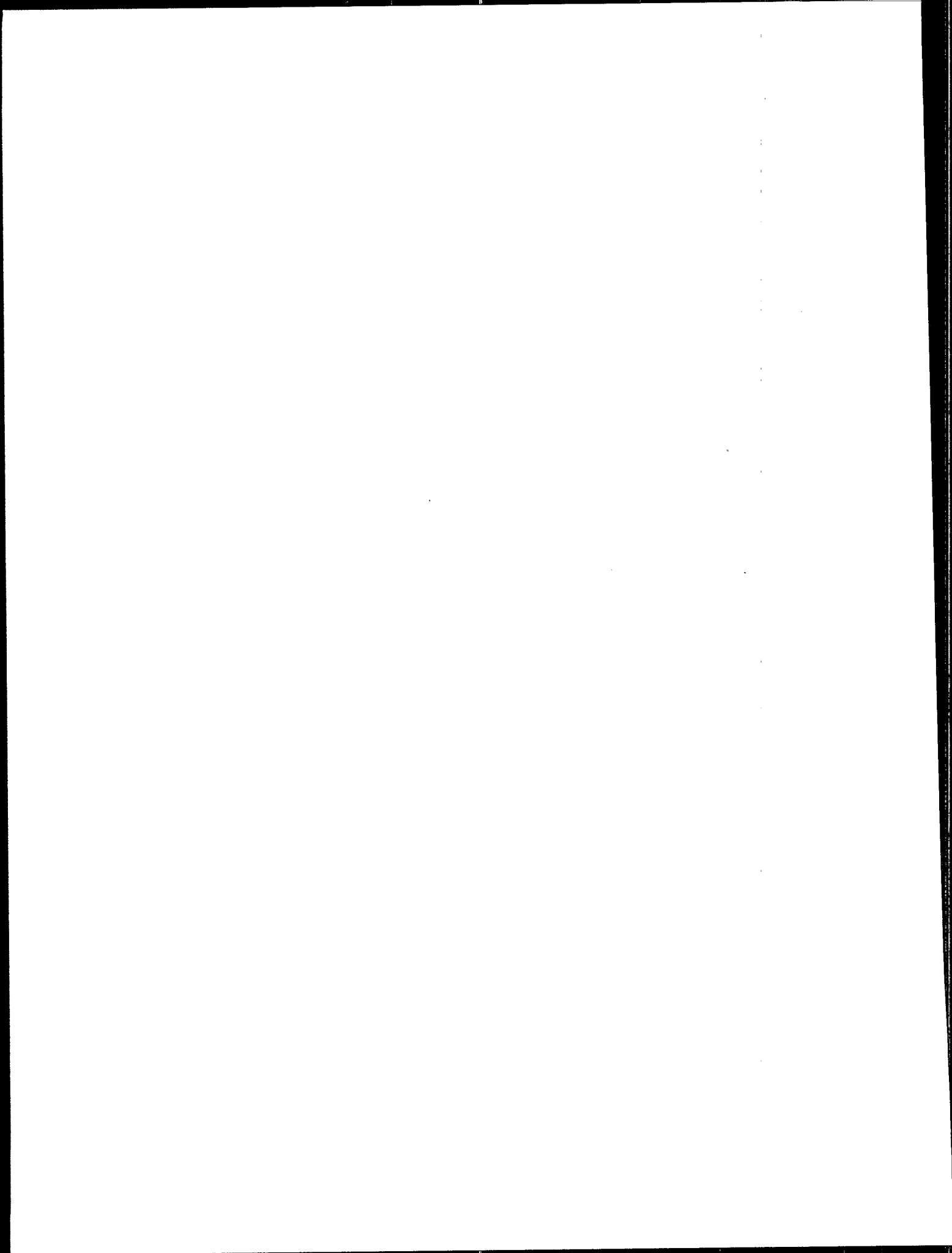
Section 1. General Provisions

1.1 Purpose and Policy

This Ordinance sets forth uniform requirements for the disposal of wastewater in the service area of the City of Anytown, USA wastewater treatment system. The objectives of this Ordinance are:

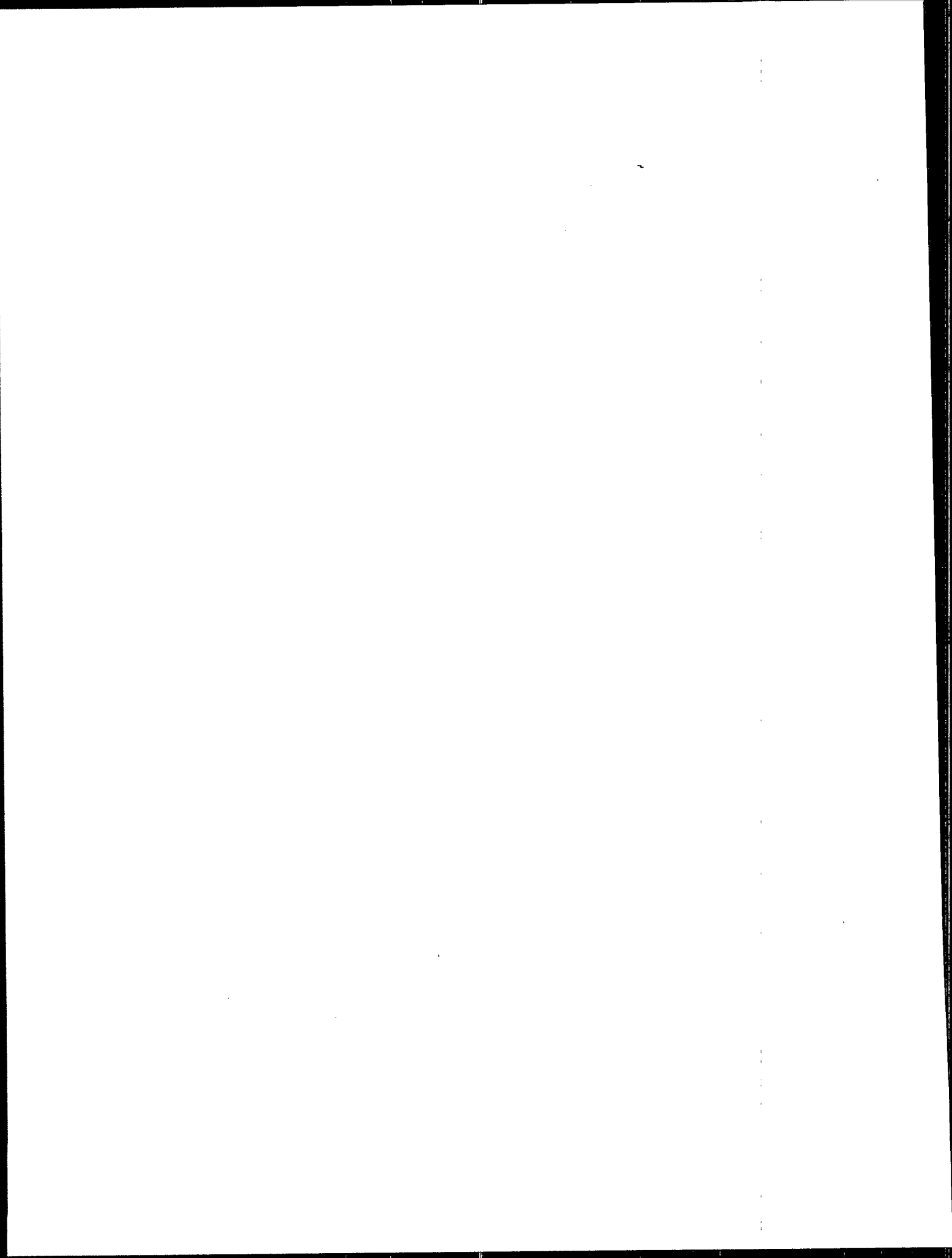
- (a) To protect the public health;**
- (b) To provide problem free wastewater collection and treatment service;**
- (c) To prevent the introduction of pollutants into the municipal wastewater treatment system, which will interfere with the system operation, will cause the City's discharge to violate its National Pollutant Discharge Elimination System *NPDES) permit or other applicable state requirements will cause physical damage to the wastewater treatment system facilities;**
- (d) To provide for full and equitable distribution of the cost of the wastewater treatment system;**
- (e) To enable the City to comply with the provisions of the Federal Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403), and other applicable federal and state laws and regulations;**

FIGURE 37



Wastewater Facility Tour

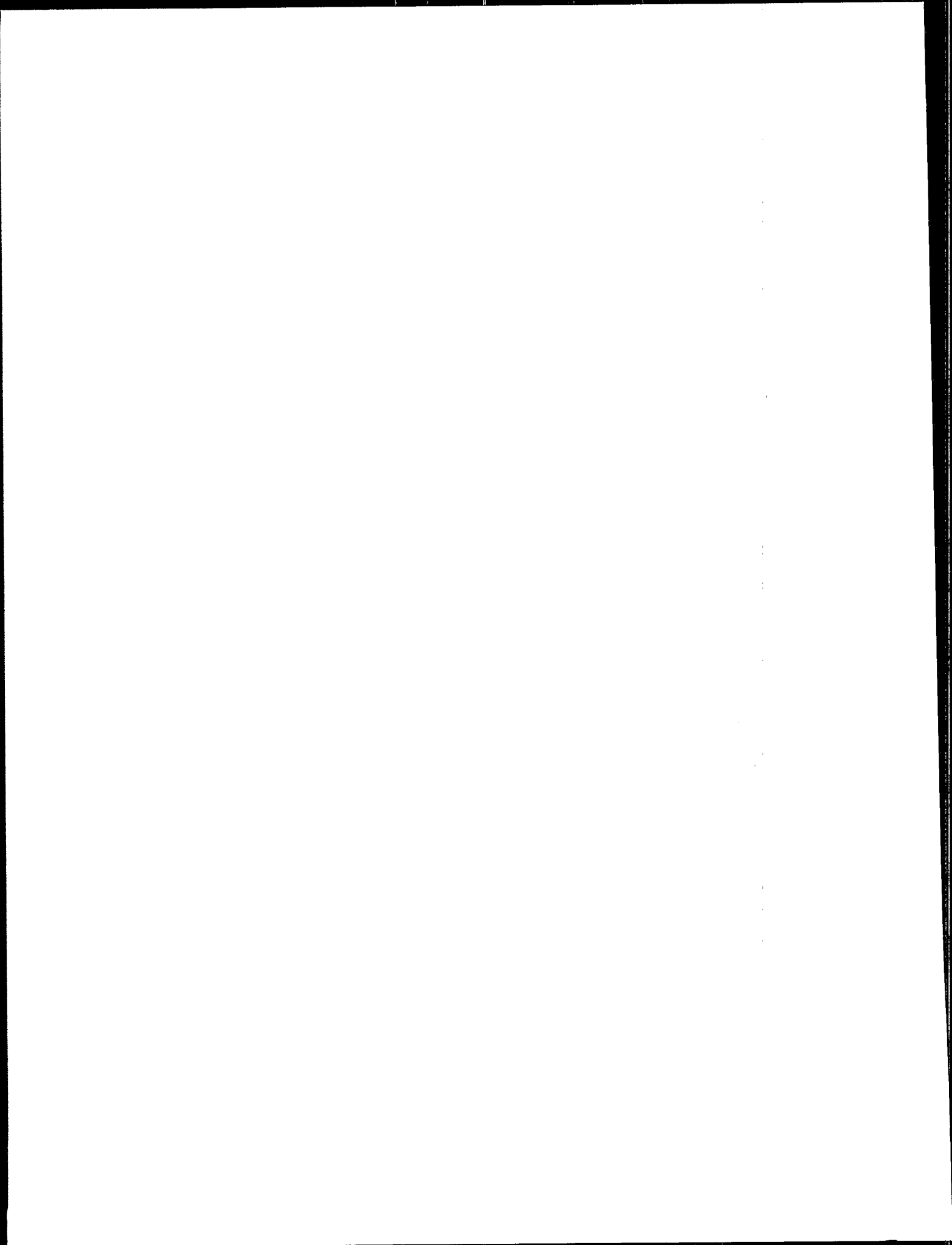
1. What is the current average flow treated at the facility (gallons per day)?	<div style="border: 1px solid black; width: 100px; height: 20px;"></div>	gpd
2. Does the facility appear to operate normally?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
3. Is any equipment out of service? (Specify)	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
4. Does maintenance appear satisfactory?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
5. Is good housekeeping evident?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
6. Is the laboratory clean and well-organized?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
7. Are adequate chemicals, supplies and parts on hand?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
8. Is staffing adequate for the operation?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
9. Are operators certified?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
10. Does the staff receive formal training?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
11. Do operational and compliance records appear adequate?	Yes <div style="border: 1px solid black; width: 40px; height: 20px;"></div>	No <div style="border: 1px solid black; width: 40px; height: 20px;"></div>
12. Note other comments or problems:		



IV.E. DRAFT A REPORT OF FINDINGS

Follow-up the evaluation by writing a report:

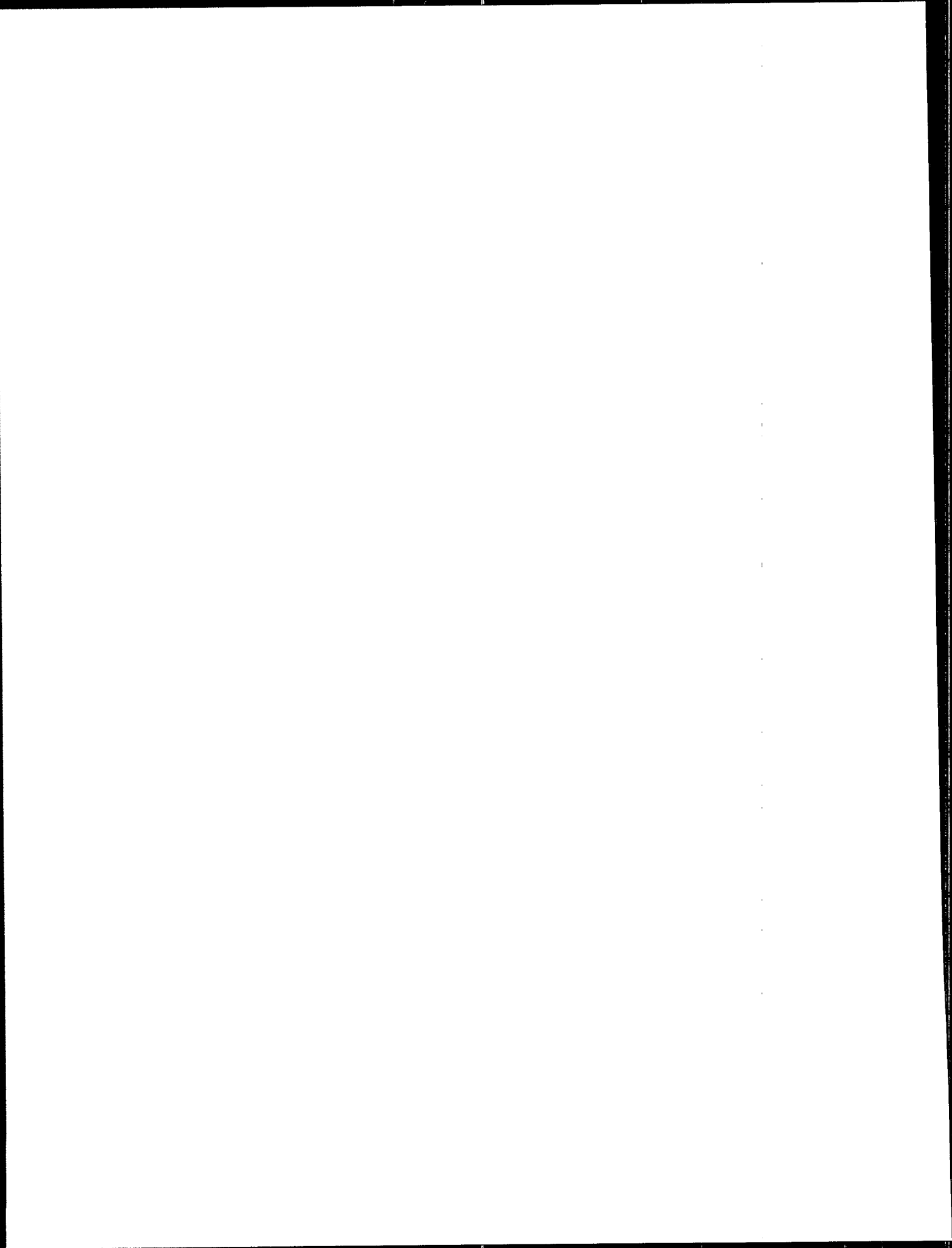
- * Cite Problems**
- * Recommend Solutions**
- * Establish Response Deadline**
- * Follow-up**



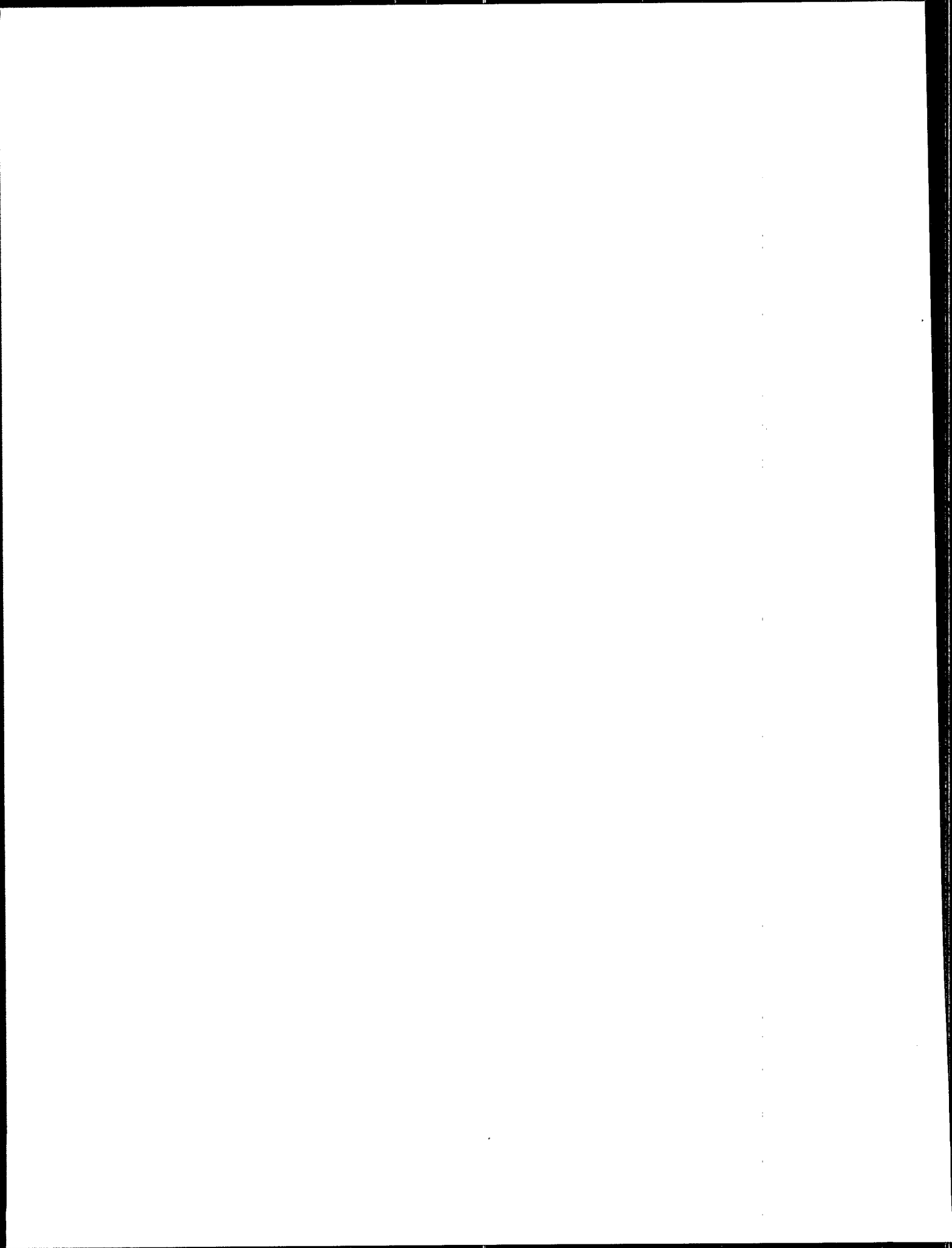
IV.E. DRAFT A REPORT OF FINDINGS

* Cite Problems

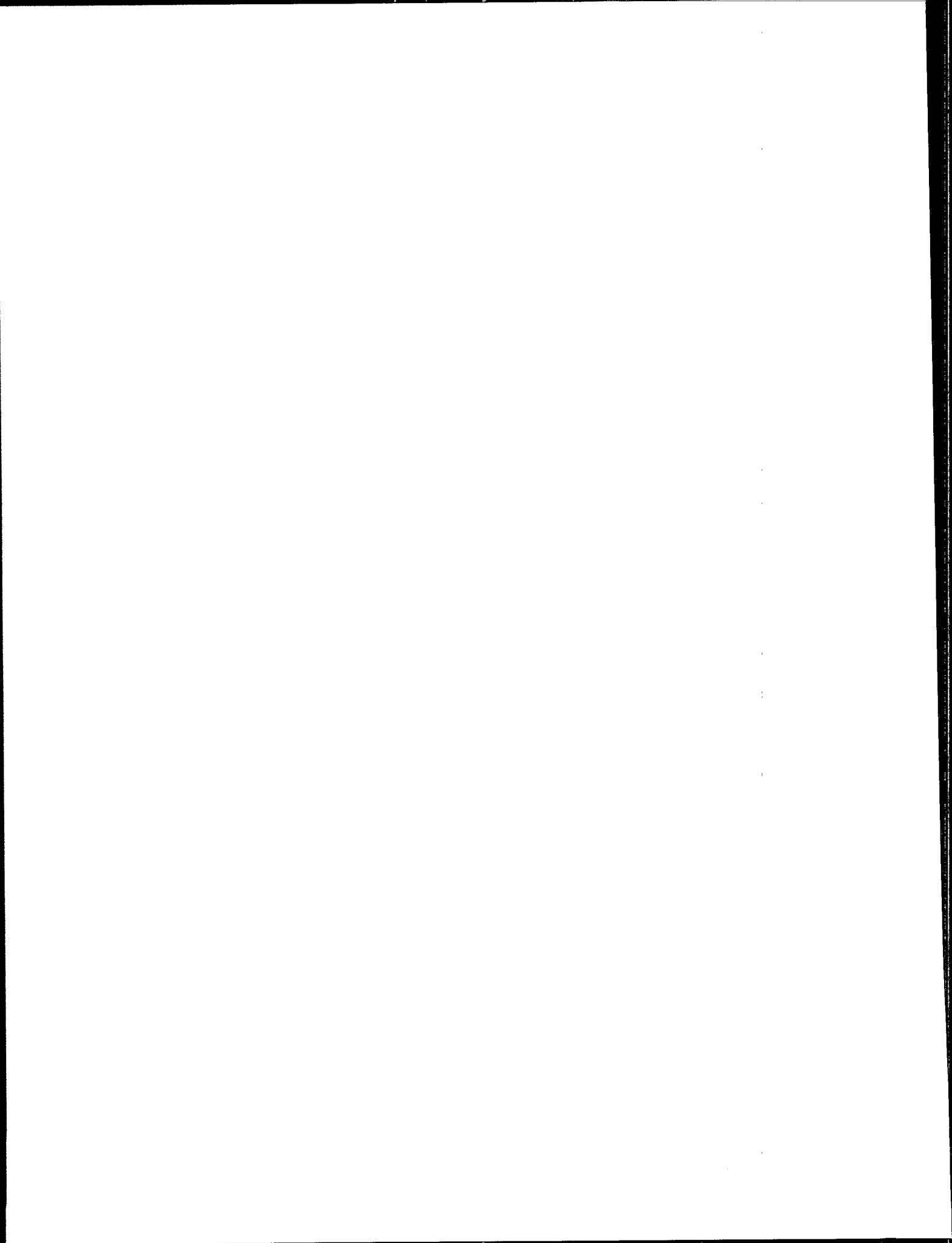
- *Use Overhead # 39 (worksheet #1 filled in)*
- *Review the problems you noted during the evaluation:*
- *Worksheet 1*
- *The wastewater system has violated the NPDES permit's BOD limit for two consecutive months. You found during the plant tour that the cause of the violation appears to be an out-of-service sludge return pump. The budget did not specify funds to repair or replace the pump. A back-up pump has never been provided.*
- *Let's assume that the utility receives monthly accounting reports for its wastewater operation.*
- *The utility has a pretreatment ordinance, but the manager was not very familiar with it.*
- *Turnover rate is not a problem. They now employ a superintendent and two operators. The utility would have a serious problem if one of the existing staff left or became ill.*
- *The organizational structure presents a problem. The superintendent can't order routine supplies directly. He must wait for council approval. The council only meets one time each month.*
- *Collecting delinquent bills is a big problem. Water service is provided by another utility. The community depends on water usage figures supplied by the water utility to use in billing. The community has no legal means short of court action to collect delinquent bills. (The usual leverage is to deny water service, but in this case, the water utility will not co-operate.)*



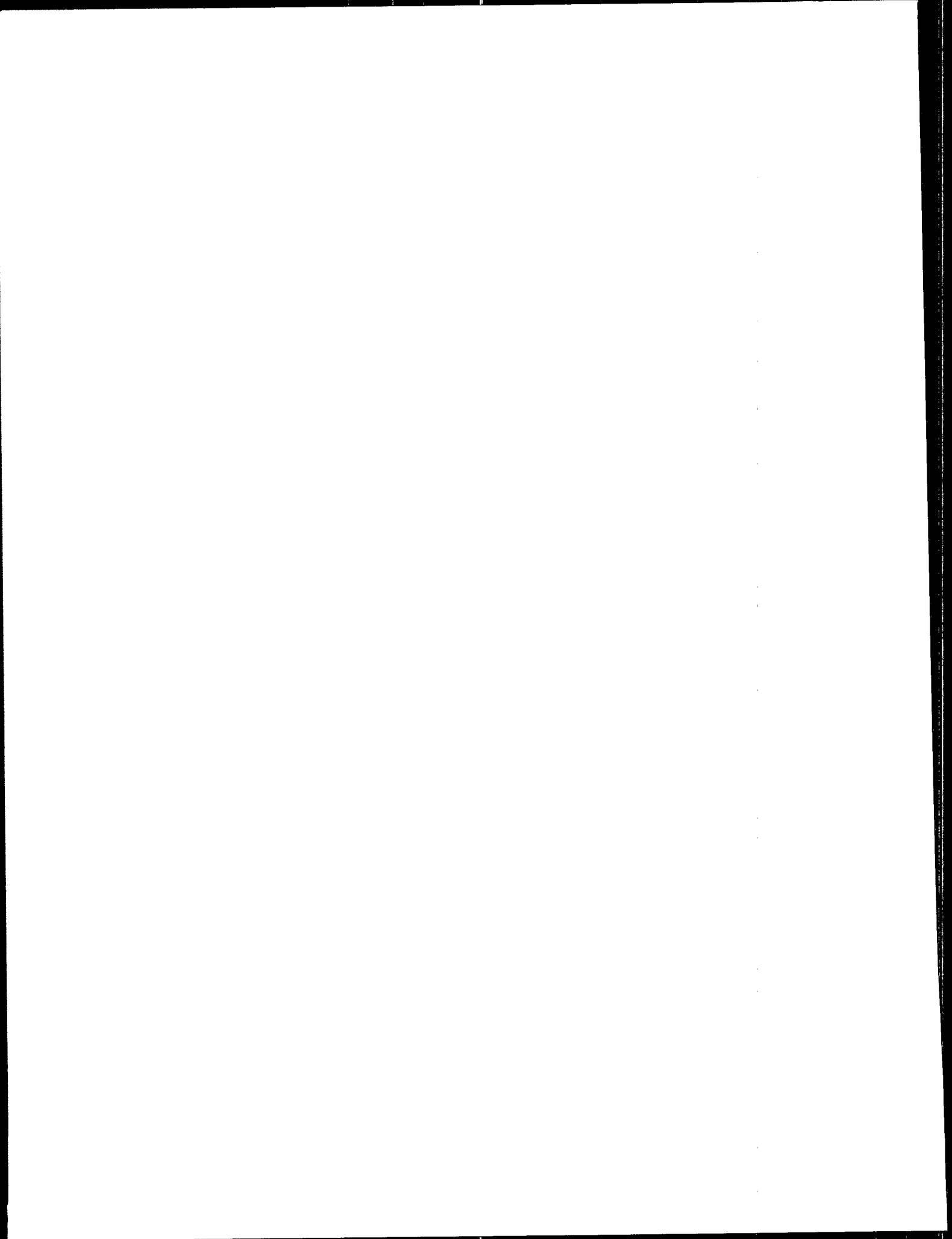
- Worksheets 2-4
- Use overhead # 40 (overhead # 32 filled in)
- Adding up all the revenues - user service charges, hookup/impact fees, taxes, assessments, interest earnings and other - the utility's total budgeted revenues are \$1,790,000.
- Use overhead # 41 (overhead # 33 filled in)
- To date, the total revenue, at the first quarter point in the fiscal year are \$424,000 or about 24%. Actual revenues are slightly below budgeted revenues for this point in the year.
- This indicates a potential problem. There could be a reason why revenues are not up to our original budget projections. Ask questions. Were meters read earlier than usual? Are some big users late in getting payments in?
- Do the same comparison with expenses.
- Use overhead # 40 again (overhead # 32 filled in)
- Add up the total budgeted operating expenses - salaries and benefits, utilities, equipment replacement fund, chemicals, supplies and parts, contract services, administration, principal and interest payments, and other. The total budgeted operating expenses are \$1,475,000.
- Use overhead # 41 again.
- The actual operating expenses are \$375,500 at the first quarter point of the fiscal year. Budgeted expenses at this point were \$368,750.
- We can see that the utility is over about \$6,800 on expenses and under by about \$23,500 on revenues. The utility is about \$30,000 below where it planned to be at this point in the year.
- Subtract total operating expenses from total revenues. We do not have a cash flow problem.
- The utility has a reserve fund to cover a revenue deficit. Remember the reserve ratio we discussed earlier?



- *Don't count on this reserve keeping the utility out of trouble too long. Sooner, rather than later, a rate increase will be needed.*
- *Overhead #42 (overhead # 33 filled in)*
- *Yes. We found that the utility reviews its user service charges annually and makes necessary adjustments.*
- *From the budgeted expenses (refer to worksheet # 2); we found that \$200,000 was budgeted for equipment replacement.*
- *We can then calculate the ERF% as $\text{ERF costs} / (\text{total operating expenses} - \text{P+I payments}) \times 100\%$. $\$200,000 / (\$1,475,000 - \$450,000) \times 100\% = 19.5\%$ (this is high).*
- *We found that a certified public accounting firm reviews the utility's accounts annually.*
- *Worksheets 5-6*
- *Overhead #43*
- *During conversations and examination of financial records, ordinances and procedures, we found that:*
- *Yes, costs are distributed proportionally to each user. No outside political jurisdictions are served.*
- *Yes, the sewer use ordinance incorporates a proportionate rate schedule.*
- *I/I costs are not billed to specific users, but are spread proportionally among all user.*
- *The minimum charge is \$2.50; the rate/1000 gallons is \$3.50.*
- *Customers are notified annually of the rate by a special notice in their bills each June.*
- *We have enough information to calculate the treatment rate.*



- *Treatment rate = OM&R + Debt Service Costs divided by the total flow received at the wastewater plant.*
- *From previous information OM&R costs are \$1,025,000. Debt Service Costs are \$450,000/yr. We found on our plant tour that the total flow averages 1.9 mgd or 700 million gallons/yr.*
- *Therefore the treatment rate is $(\$1,025,000 + 450,000)/700,000 = \$2.11/1000$ gallons. This indicates that the current rate of \$3.50/1,000 gallons is probably high. During the remainder of this course, we'll examine the reason.*
- *Overhead #44*
- *We found that the utility determines the wastewater user fees by water meter readings.*
- *The utility's sewer use ordinance provides for surcharges for high strength wastes, but the community's rate schedule does not have a surcharge rate. This is an item that the utility needs to correct.*
- *Now, an average 7,000 gallon/mo. user pays \$324/yr. $((\$2.50 + (\$3.50/1000 \text{ gal.} \times 7,000 \text{ gal})) \times 12 \text{ mo.} = \$324.$*
- *The utility has never billed a surcharge fee. A pretreatment enforcement program has never been established by the utility.*
- *Yes, all users are billed separately for wastewater services.*
- *There are no other political jurisdictions served by this utility.*
- *Worksheet 7*
- *Overhead # 45*
- *At the plant, you found: the grounds were poorly maintained; grass needed cutting; discarded equipment was strewn about; and spillage from the sludge hauling operation created a nuisance.*
- *Inadequate supplies of chemicals and lab supplies were on hand; the sludge return pump was out-of-service.*
- *While the facility was adequately staffed, no back-up staff was available for emergencies, (to cover for vacations and sick leave, etc.).*



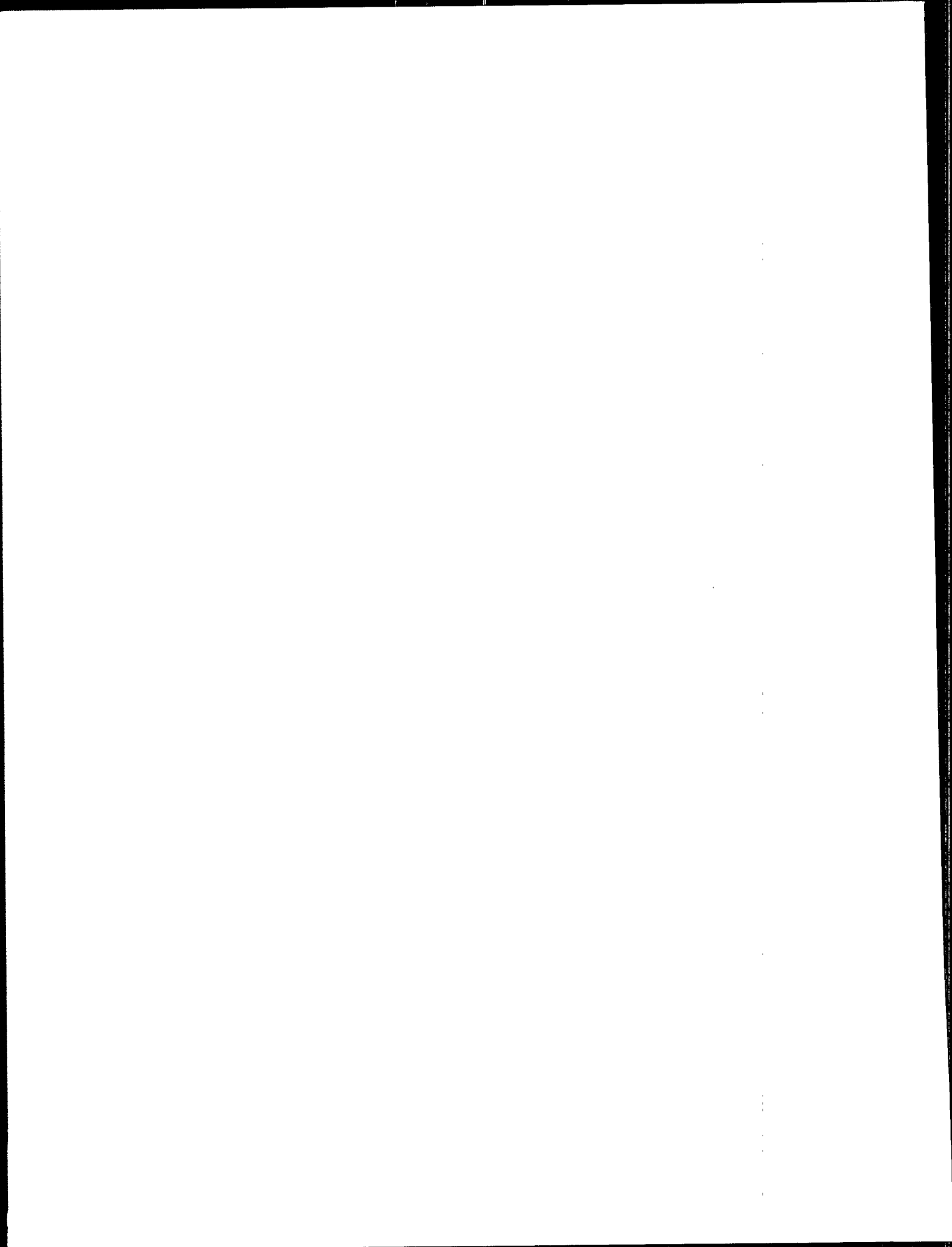
* **Recommend Solutions**

* **Establish Response Deadline**

- *Use Overhead # 46 to illustrate a draft report.*
- *If you receive a regulatory evaluation the report will: (1) state the problem; (2) cite any applicable federal, state or local requirements; (3) propose recommendations for resolving the problem; and (4) ask the community to develop a corrective action plan.*
- *Use this as a guide for a self-evaluation.*

* **Follow-up**

- *Follow-up! Keep on top of this situation! Offer assistance.*



Utility/Community Name: _____

Name of Local Contact: _____

Telephone Number: (____) _____ Date _____

User Service Charge Worksheet

Management/Operating Policies/Compliance

1. Describe any NPDES permit violation(s) which occurred within the last 12 months and the reason(s) for the violation(s).

BOD₅
INADEQUATE SLUDGE RETURN

2. Did insufficient operating revenues contribute to the NPDES violation(s)?

Yes ☐ No ☒

3. Does the utility receive monthly accounting reports for wastewater revenues and expenses?

Yes ☒ No ☐

4. Does the utility have a pretreatment ordinance?

Yes ☒ No ☐

5. Does the organizational structure of the wastewater utility present any operational problems?

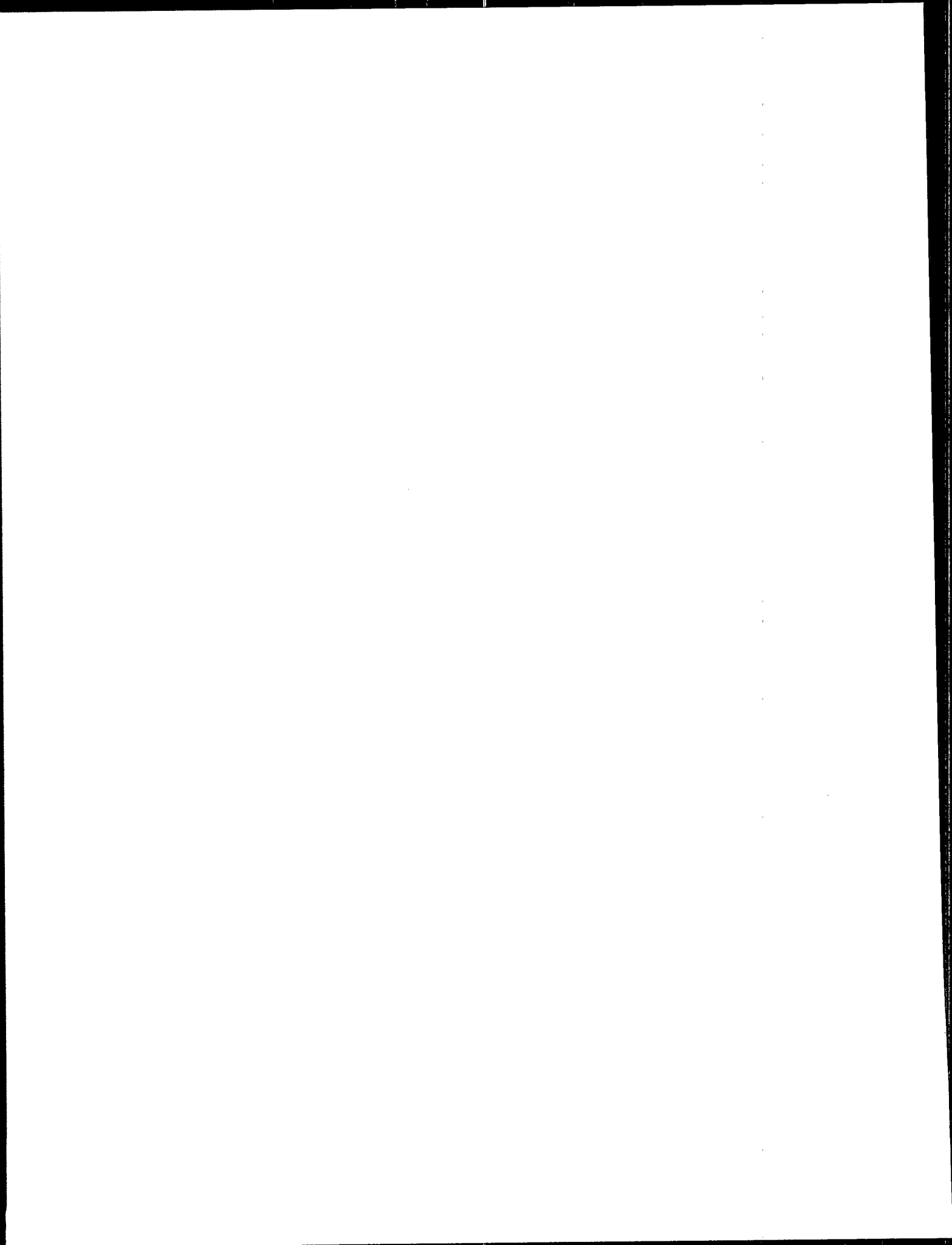
Yes ☒ No ☐

6. What is the annual personnel turnover rate?

LOW

7. Are the procedures for collecting delinquent wastewater bills adequate?

Yes ☐ No ☒



Financial Information

1. Does the wastewater budget show revenues and expenses by line item? (Note: The wastewater budget should be separate from other governmental utility budgets like water, garbage disposal, etc.)

Yes

/

No

2. What are the total annual budgeted revenues for the wastewater operation?

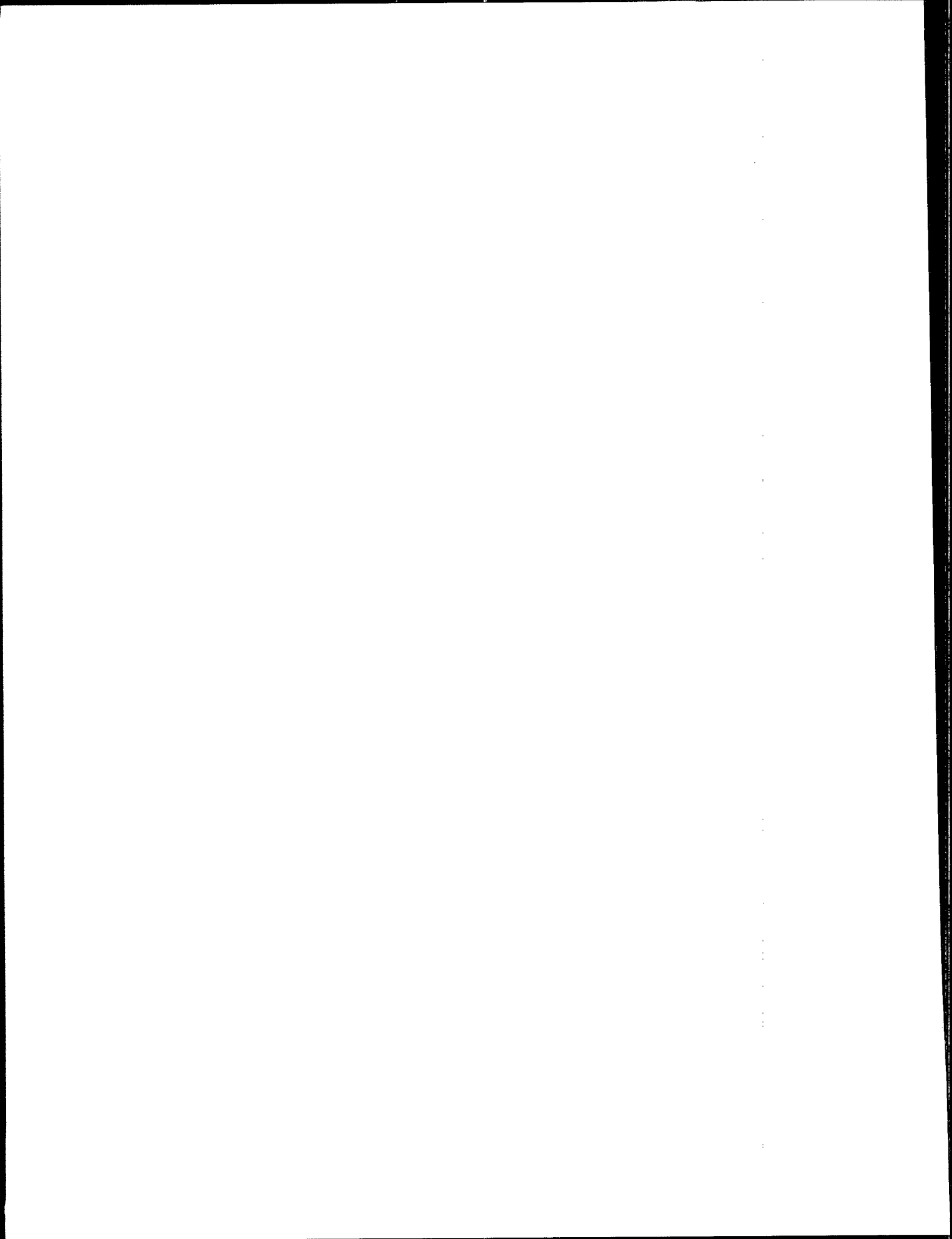
TOTAL BUDGETED REVENUES

	\$
User service charges	1,700,000
Hookup/impact fees	25,000
Taxes/assessments	10,000
Interest earnings	50,000
Other	5,000
<i>Total Budgeted Revenues</i>	<i>1,790,000</i>

3. What are the total annual budgeted expenses for the wastewater operation?

TOTAL BUDGETED OPERATING EXPENSES

	\$
Salaries and benefits	450,000
Utilities	25,000
Equipment replacement fund	300,000
Chemicals	30,000
Supplies and parts	20,000
Contract services	0
Administration	125,000
Principal and interest payments	450,000
Other	25,000
<i>Total Budgeted Operating Expenses</i>	<i>1,475,000</i>



4. What are actual revenues to date? How do they compare with budgeted revenues to date?

BUDGETED REVENUES VS. ACTUAL		
	\$ Budgeted	\$ Actual
	$1,790,000 \times .25$	
Total Revenues	447,500	424,000

5. What are actual expenses to date? How do they compare with budgeted expenses to date?

BUDGETED EXPENSES VS. ACTUAL		
	\$ Budgeted	\$ Actual
	$1,475,000 \times .25$	
Total Operating Expenses	368,750	375,500

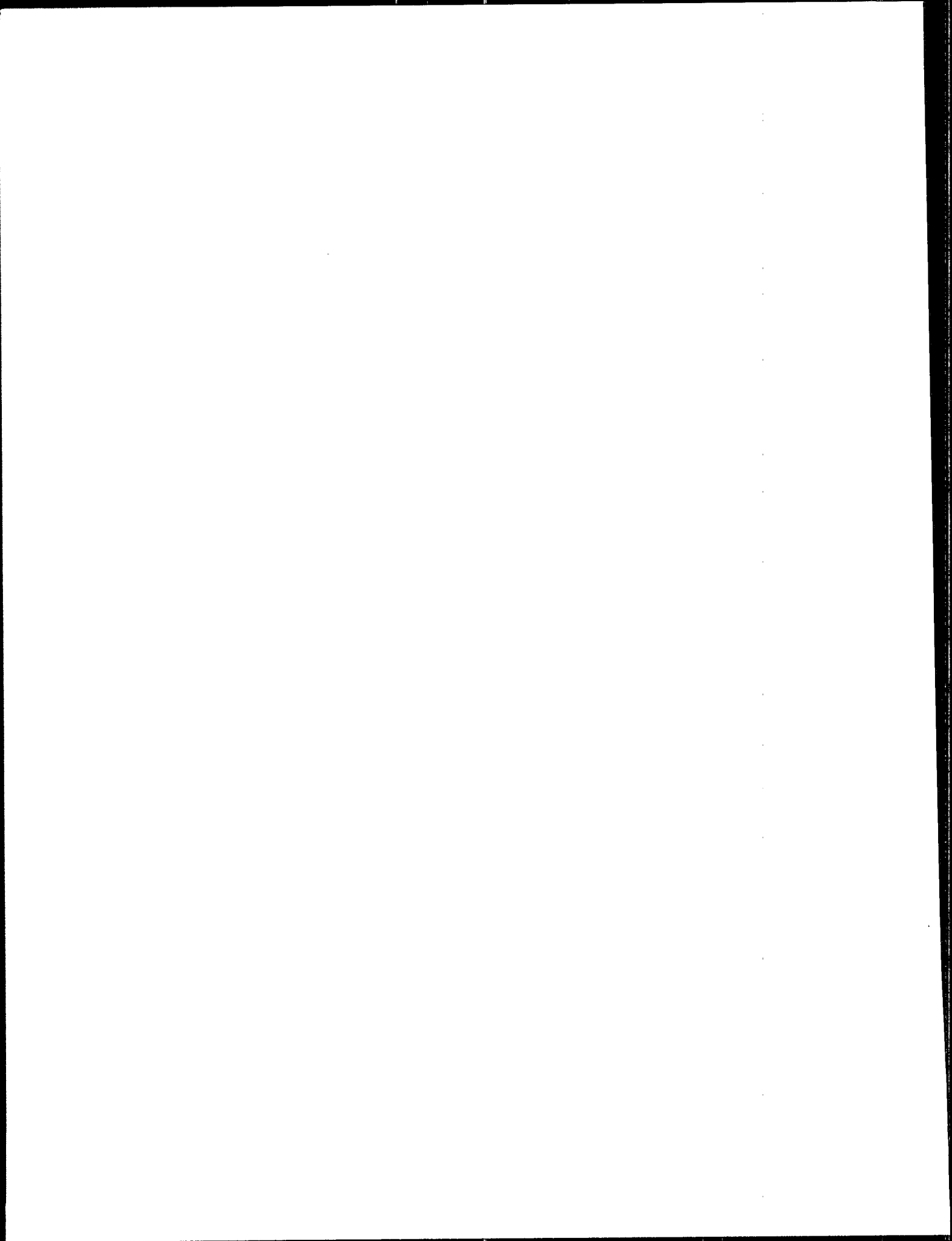
6. Does the wastewater utility show a cash flow problem?

Yes ☐ No ☒

ACTUAL REVENUES & EXPENSES

	\$
Total Revenues	424,000
Total Operating Expenses (-)	375,500
Cash Available	48,500

7. How does the utility cover a revenue deficit?



8. Does the utility review user service charges and adjust them annually to reflect budgeted or actual expenses?

Yes



No

9. Does the utility have an equipment replacement fund (ERF)?

Yes



No

10. What percentage of operation, maintenance and equipment replacement funds are set aside for equipment replacement?

Equipment

Replacement

Fund

(ERF) (%)

=

ERF Costs

(Total Operating Expenses) - (P&I Payments)

X 100%

ERF (%) =

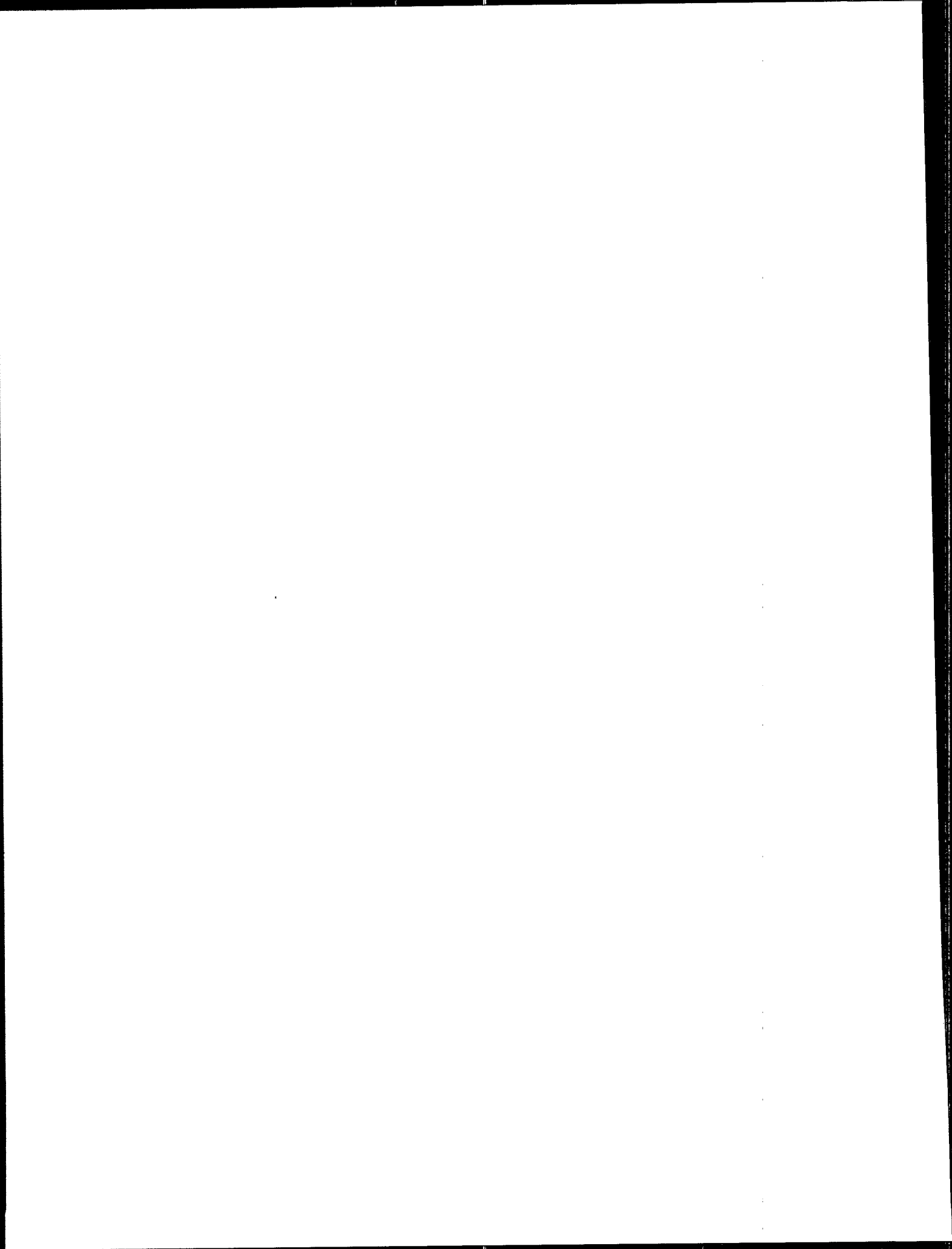
19.5

11. Does a certified public accounting firm review the utility accounts?

Yes



No



User Service Charge System

1. Does the utility distribute the wastewater collection and treatment costs proportionally to each user, user class or political jurisdiction?

Yes ☒ No ☐

2. Does the utility use a sewer use ordinance that incorporates a proportionate wastewater rate schedule? (Attach a copy.)

Yes ☒ No ☐

3. Does the utility distribute the I/I costs proportionally to each user, user class or political jurisdiction?

Yes ☒ No ☐

4. Does the rate schedule specify a uniform rate for wastewater treatment based on the volume of usage?

Rate = \$ 3.50 /1000 gal

Yes ☒ No ☐

5. Does the rate schedule provide for a minimum charge?

Yes ☒ No ☐

6. What is the minimum charge?

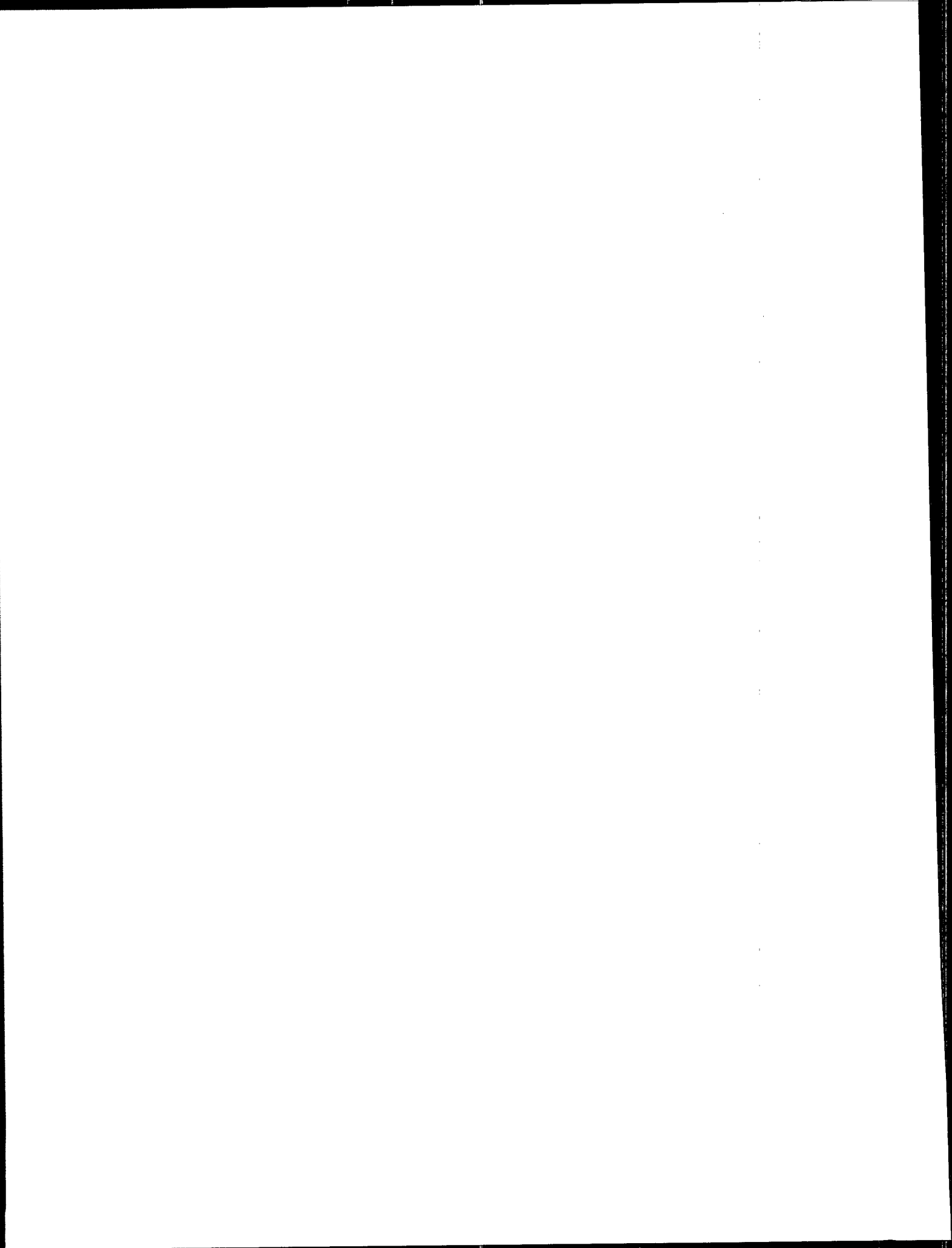
\$ 2.50

7. Are customers notified annually of the wastewater rates?

Yes ☒ No ☐

8. What is the actual total operation, maintenance, equipment replacement and debt service costs per 1000 gallons of wastewater treated by the utility?

Treatment Rate = $\frac{\text{OM\&R} + \text{Debt Service Costs}}{\text{Total Flow}}$ = \$ 2.11 /1000 gal



9. How does the utility determine wastewater user fees? (Check one)

Water meter readings?

☒

Equivalent dwelling unit?

☐

Other? (Specify)

☐

10. Does the rate schedule specify surcharges for high-strength wastes?

Yes

☐

No

☒

11. How does the utility determine surcharges?

12. What is the average annual wastewater bill for a typical residential user?

\$

324

13. Are users billed separately for wastewater services?

Yes

☒

No

☐

14. Do all political jurisdictions served by the utility have a sewer use ordinance which incorporates a proportional wastewater rate schedule?

Yes

☐

No

☐

15. Do users outside the utility's political boundary pay the same rate as inside users?

Yes

☐

No

☐

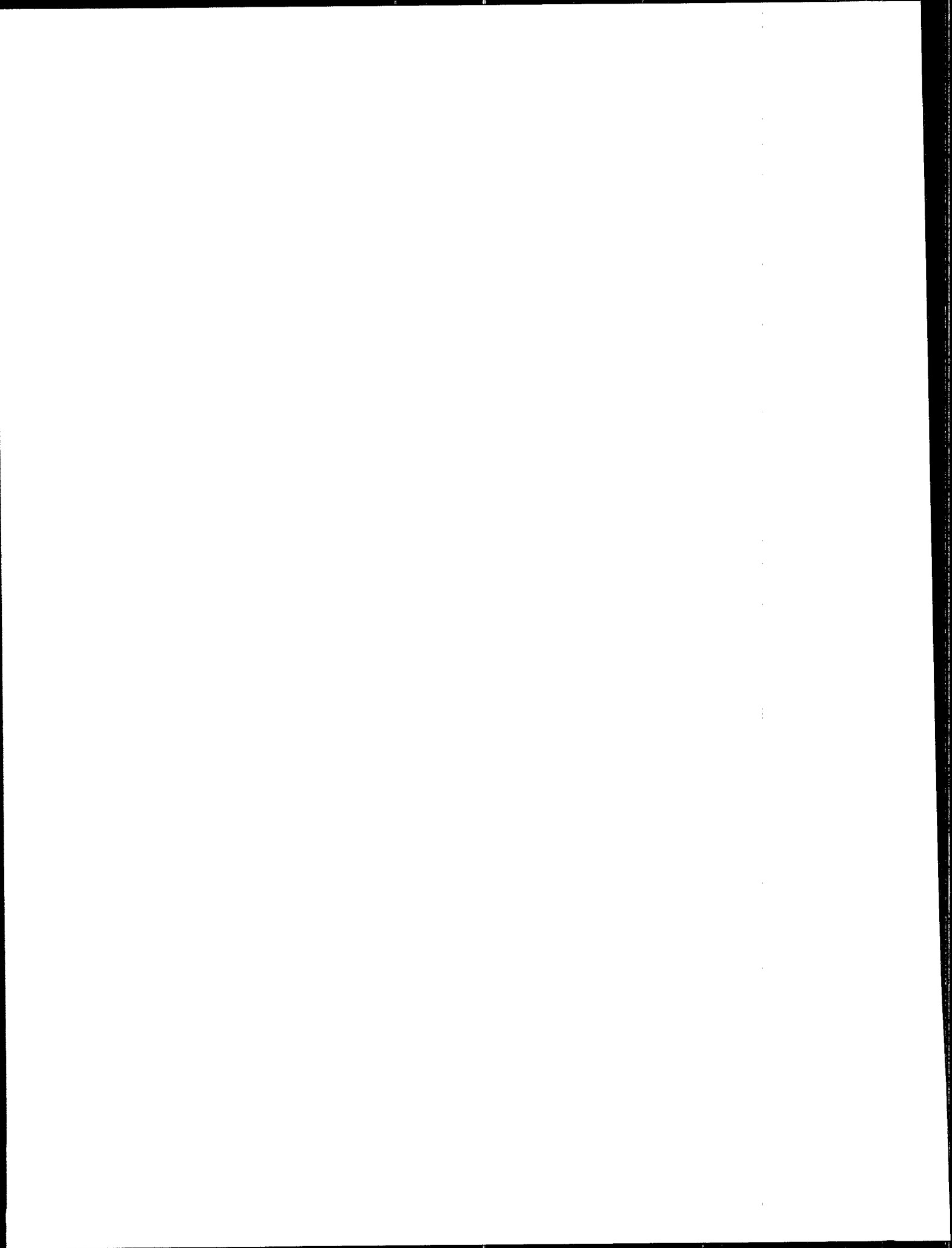
16. Do all serviced political jurisdictions meet the same user service charge system conditions as the wastewater treating utility? (If No, describe.)

Yes

☐

No

☐



Wastewater Facility Tour

1. What is the current average flow treated at the facility (gallons per day)?

1,900,000 gpd

2. Does the facility appear to operate normally?

Yes No ☒

3. Is any equipment out of service? (Specify)

Yes ☒ No ☐

4. Does maintenance appear satisfactory?

Yes No ☒

5. Is good housekeeping evident?

Yes No ☒

6. Is the laboratory clean and well-organized?

Yes No ☒

7. Are adequate chemicals, supplies and parts on hand?

Yes No ☒

8. Is staffing adequate for the operation?

Yes ☒ No ☐

9. Are operators certified?

Yes ☒ No ☐

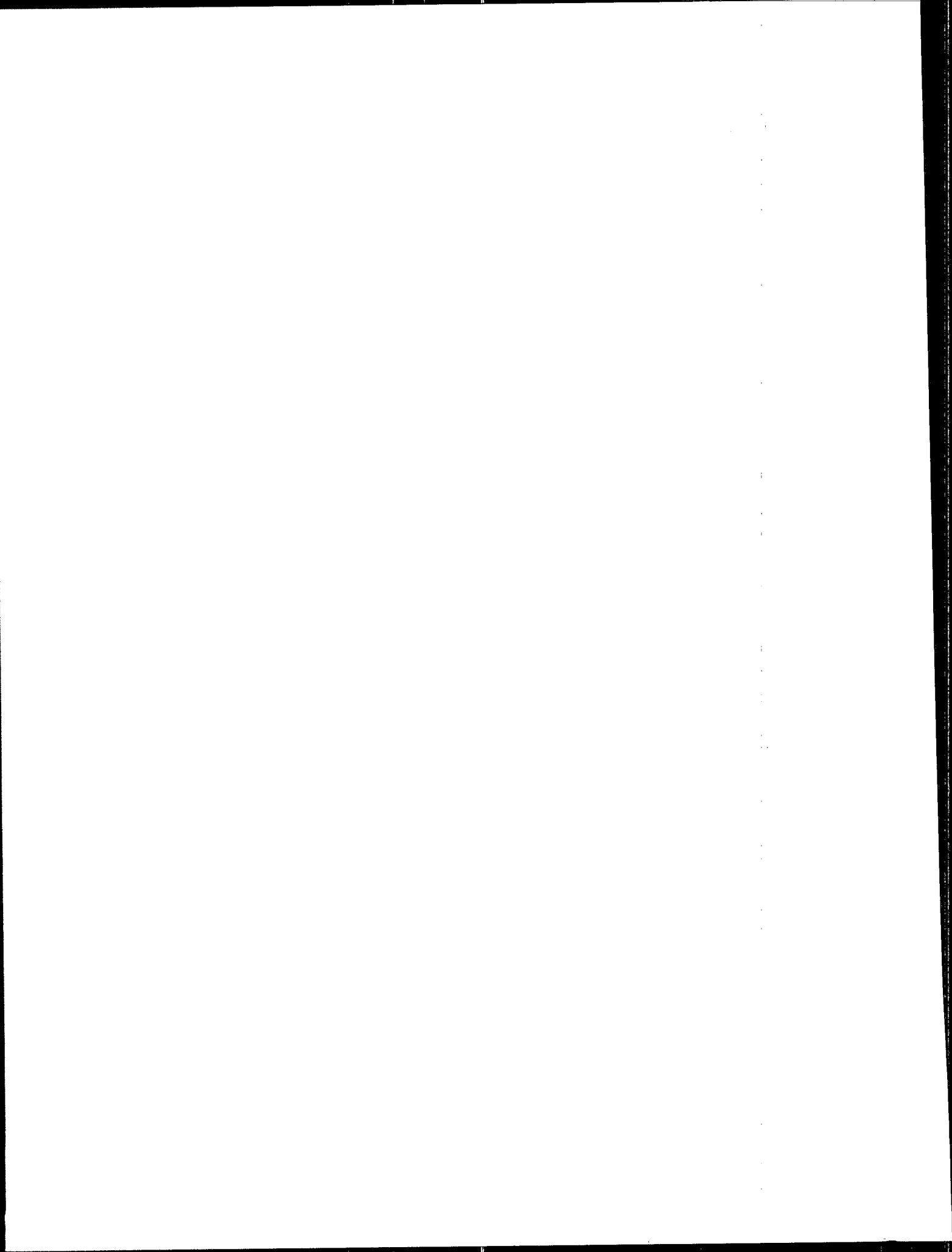
10. Does the staff receive formal training?

Yes No ☒

11. Do operational and compliance records appear adequate?

Yes ☒ No ☐

12. Note other comments or problems:



Follow-up letter after a user charge evaluation

(Date)

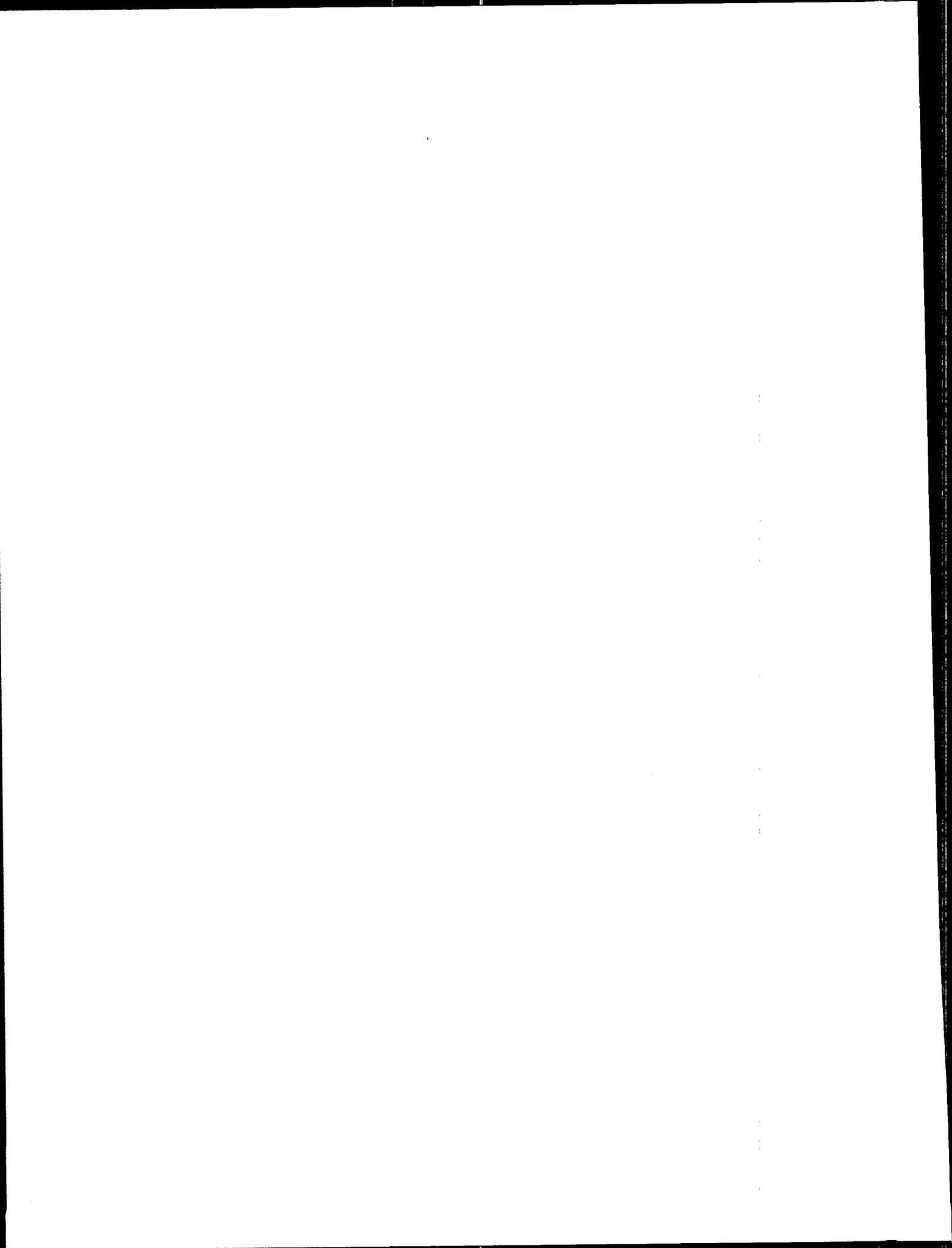
**Mr. James Sullivan
Finance Director
City of Anytown
100 S. Main St.
Anytown, USA**

Dear Mr. Sullivan:

It was a pleasure to meet with you and your staff on (date) to discuss your wastewater utility's financial operations. As a result of our discussions and the tour of the wastewater treatment facility, I noted the following concerns.

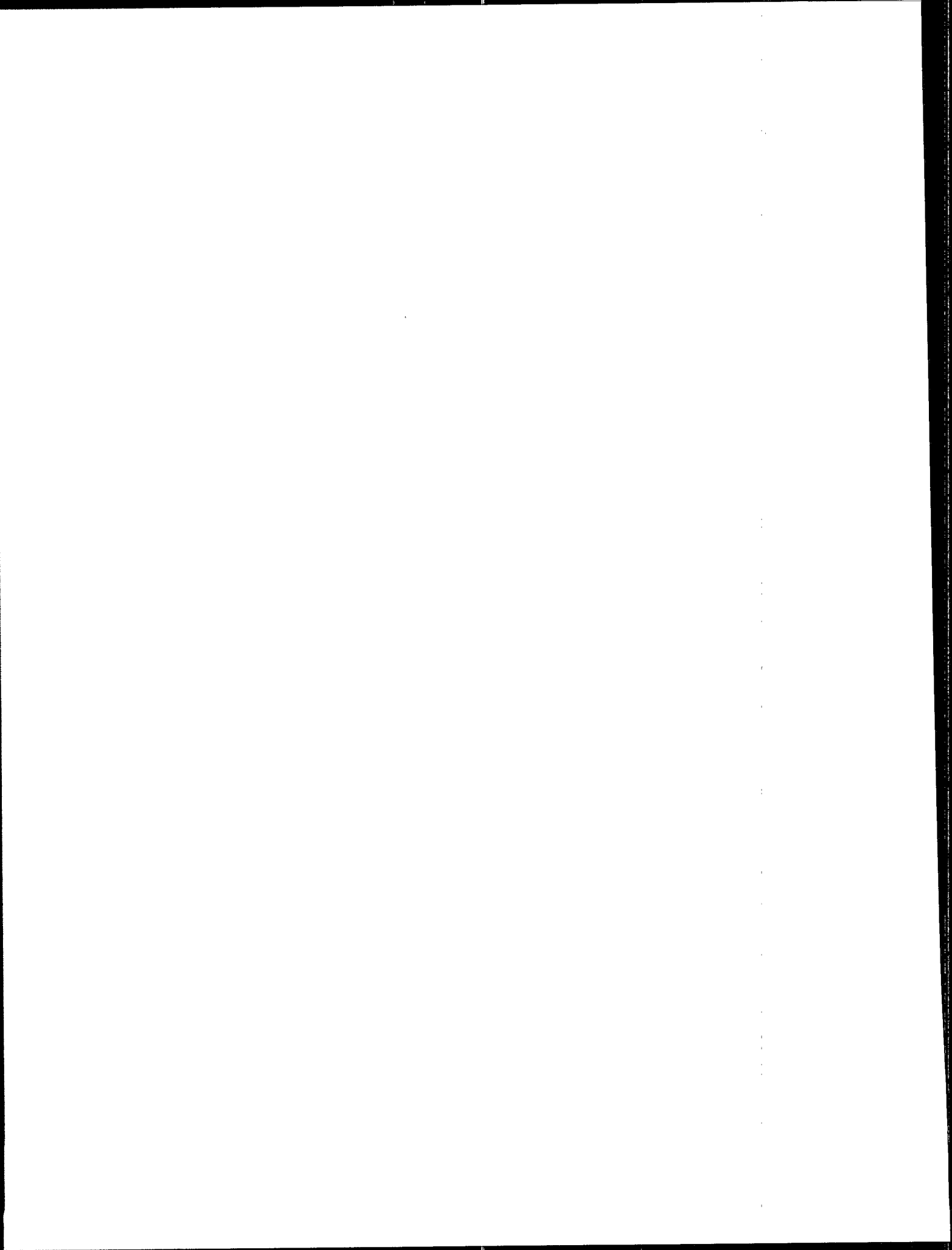
- 1. The wastewater and water accounting systems are not separate. The water and wastewater operations need to be financially independent and self-sufficient. The Anytown wastewater treatment facility was partially financed by a grant from the U.S. Environmental Protection Agency. This means Anytown must establish a financial management system which separately accounts for wastewater revenues and expenditures. The system must also identify the basis for determining operation, maintenance, equipment replacement, debt service costs and user service charges.**
- 2. The wastewater utility does not collect surcharges from users discharging high-strength waste, although the city's wastewater system's sewer use ordinance requires a surcharge on those users whose wastes increase operation and maintenance costs. This ordinance must be enforced as a condition of your EPA grant.**

FIGURE 46



3. The actual wastewater expenses to date at the half-way point in this fiscal year are \$125,000. The total budgeted amount for the fiscal year is \$200,000. This results in a projected deficit of \$50,000 for the year. User service charges must be increased to provide the needed operating revenue since collection of surcharge revenues will not be sufficient to eliminate the deficit.
4. The wastewater unit volume rate is insufficient to cover the operational costs of the utility. A rough calculation showed that the OM&R costs are \$1.20/ 1,000 gallons and debt service costs are \$0.60 for a total rate of \$1.80/ 1,000 gallons.
5. The accounting system does not budget for an equipment replacement fund. You need an equipment replacement fund to pay for equipment and accessories that wear out during the life of the treatment facility. The fund is not to be used for expanding the capacity or enhancing the treatment facility's performance. It must be used to keep the facility operating at the level for which it was designed and constructed. This is an EPA requirement.
6. At the treatment facility, the secondary clarifier sludge return pump was inoperable and a backup pump was not available. The sludge return pump is essential to proper operation. As we discussed during the visit, you should install a temporary pump as soon as possible and repair or replace the inoperable sludge pump. You need a backup pump to prevent this circumstance from reoccurring.
7. The treatment plant grounds were poorly maintained. The grass needed mowing; discarded equipment was lying around; spillage from the sludge hauling operation created a nuisance. The appearance of a wastewater treatment facility is usually a good indicator of the level of professionalism, motivation and training of the staff. It also may be an indicator of inadequate funding/staffing of the treatment facility. As a result of our discussions and tour of the facilities, it appears that additional staff is needed to achieve proper operation and maintenance.

FIGURE 46A



8. At the treatment facility, there was only a two-day supply of chlorine and a limited supply of laboratory reagents and chemicals on hand. Good management practice requires an adequate supply of essential chemicals and reagents on hand to operate and maintain the facility properly. From our discussion, it appears the Anytown utility should revise its purchasing procedure to allow the superintendent to order routine supplies directly without waiting for governing body approval.
9. This system had exceeded its monthly average BOD NPDES permit limit for two consecutive months. The major cause of this violation appears to be inadequate sludge return. The pump outage discussed above should be rectified immediately.

Many of the above concerns are consistent with the conclusion that Anytown's wastewater treatment facility needs more financial resources for proper operation and maintenance. I have enclosed a copy of EPA's publication Building Support for Increasing User Fees that tells how to increase the facility's revenue base.

Please develop a corrective action plan with compliance dates to address the above findings, and submit the plan to this office no later than (date).

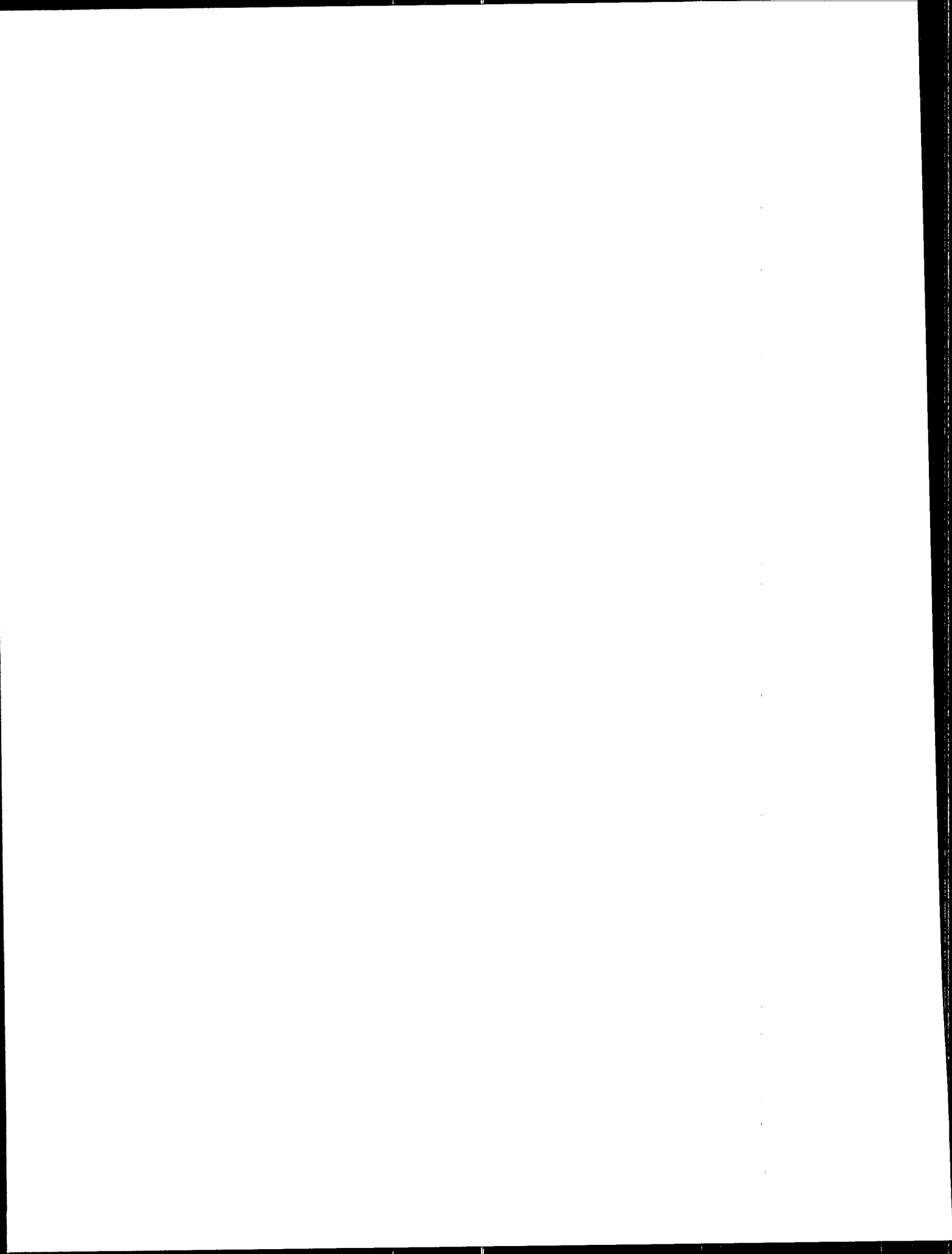
Our office will be glad to work with the City of Anytown to protect its water quality and improve its wastewater financial operations. If you have questions about this report, please feel free to call me.

Sincerely,

Anne Taylor
Utility Board Manager

enclosure

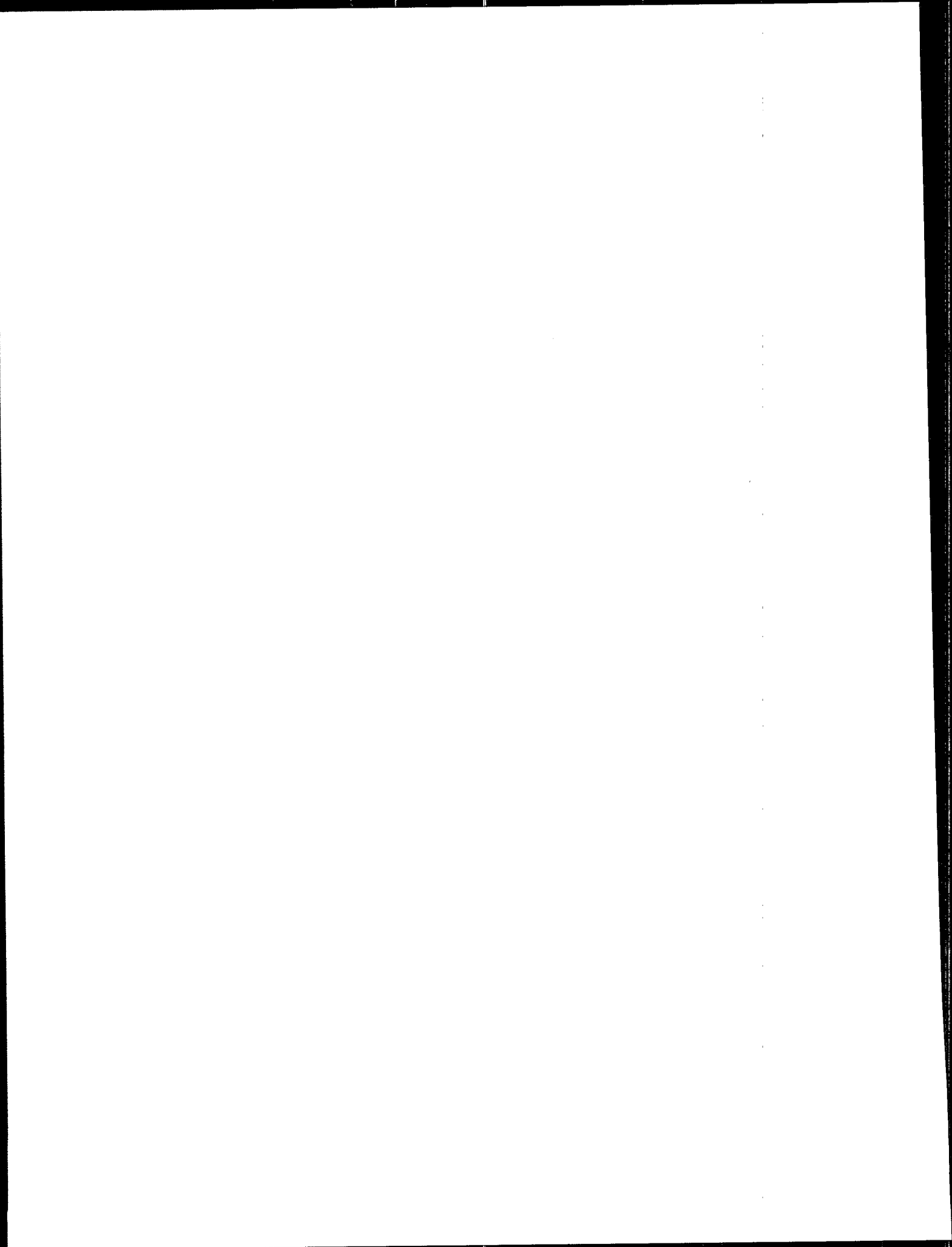
FIGURE 46B



V. DETERMINING USER SERVICE CHARGE RATES

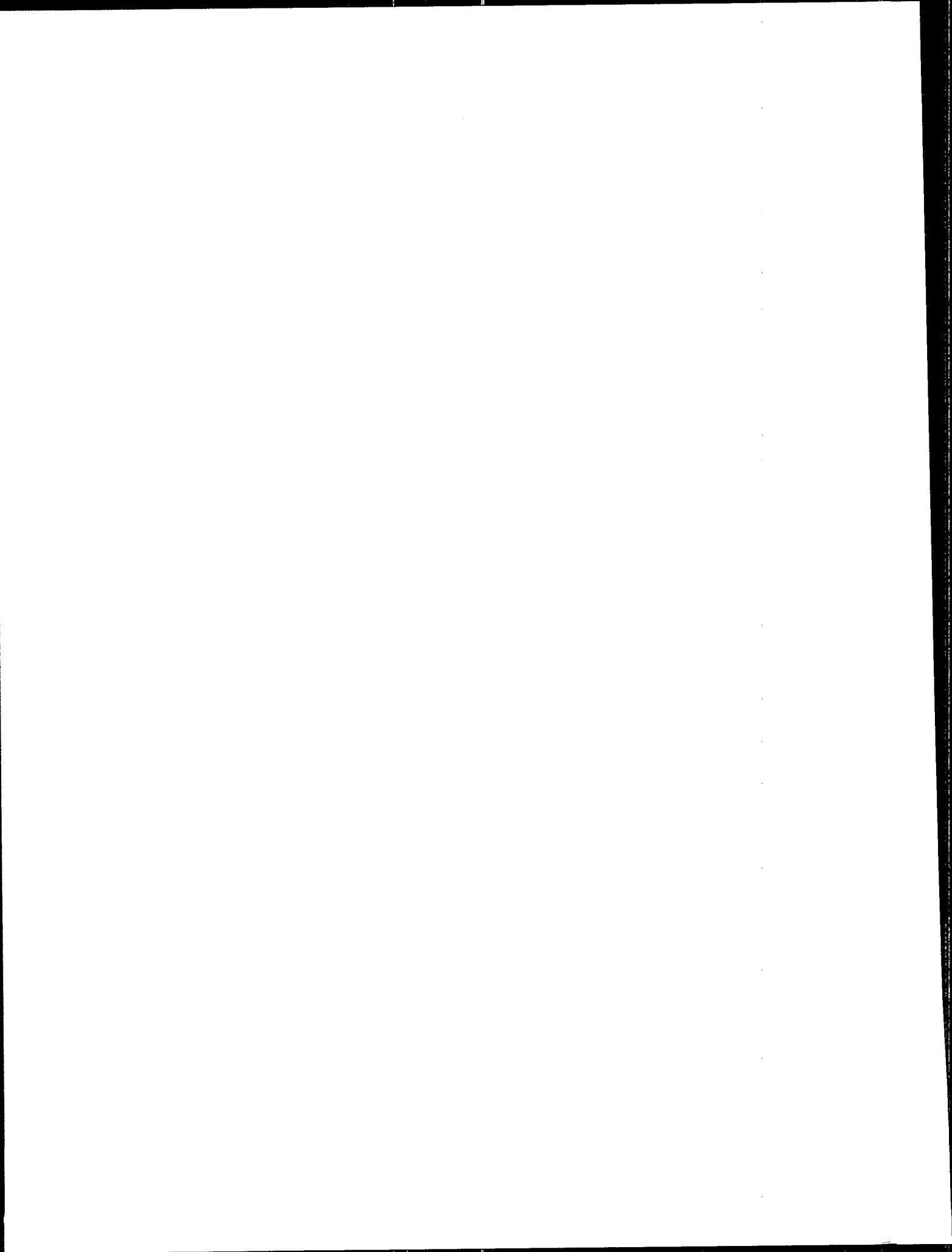
- A. GETTING STARTED**
- B. UNDERSTAND THE THEORY**
- C. CALCULATE USER CHARGES**

Tell the topics that will be covered in this session

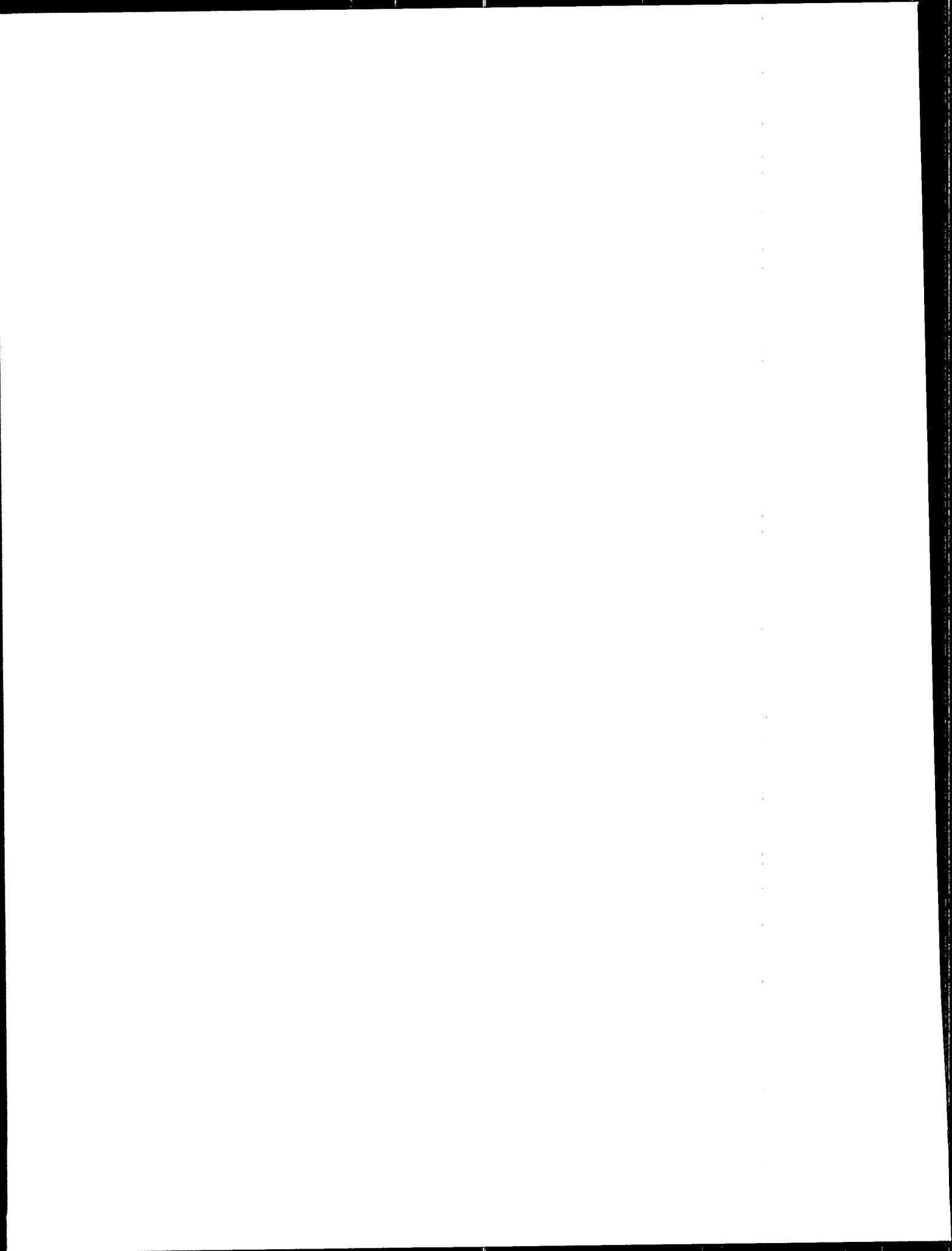


V.A. GETTING STARTED

- *Before determining what your utility's user service charge rates should be, you'll have to gather some information. Most of this information has already been discussed.*
- *Financial Statement*
- *From the latest fiscal year financial statement, obtain all wastewater collection and treatment expenses.*
- *Use Overhead # 47*
- *This information was presented earlier. Recall the salaries and fringe benefits were \$450,000; utilities were \$175,000; equipment replacement fund was \$200,000, chemicals, supplies and parts were \$50,000; contract services was \$0; administrative costs were \$125,000; principal and interest payments were \$450,000; other costs were \$25,000. The total expenses were \$1,475,000. Remember to use actual (not budgeted) expenses when checking current rates and budgeted expenses when setting new rates.*
- *You will need all wastewater revenues other than user charges for the latest fiscal year.*
- *Use overhead # 48*
- *Revenues (other than user charges) included connection fees - \$15,000; special assessments - \$10,000; interest on investments - \$50,000; other (impact fees, etc.) - \$15,000; minimum service fees - \$20,000. The total non-user charge revenues were \$110,000.*

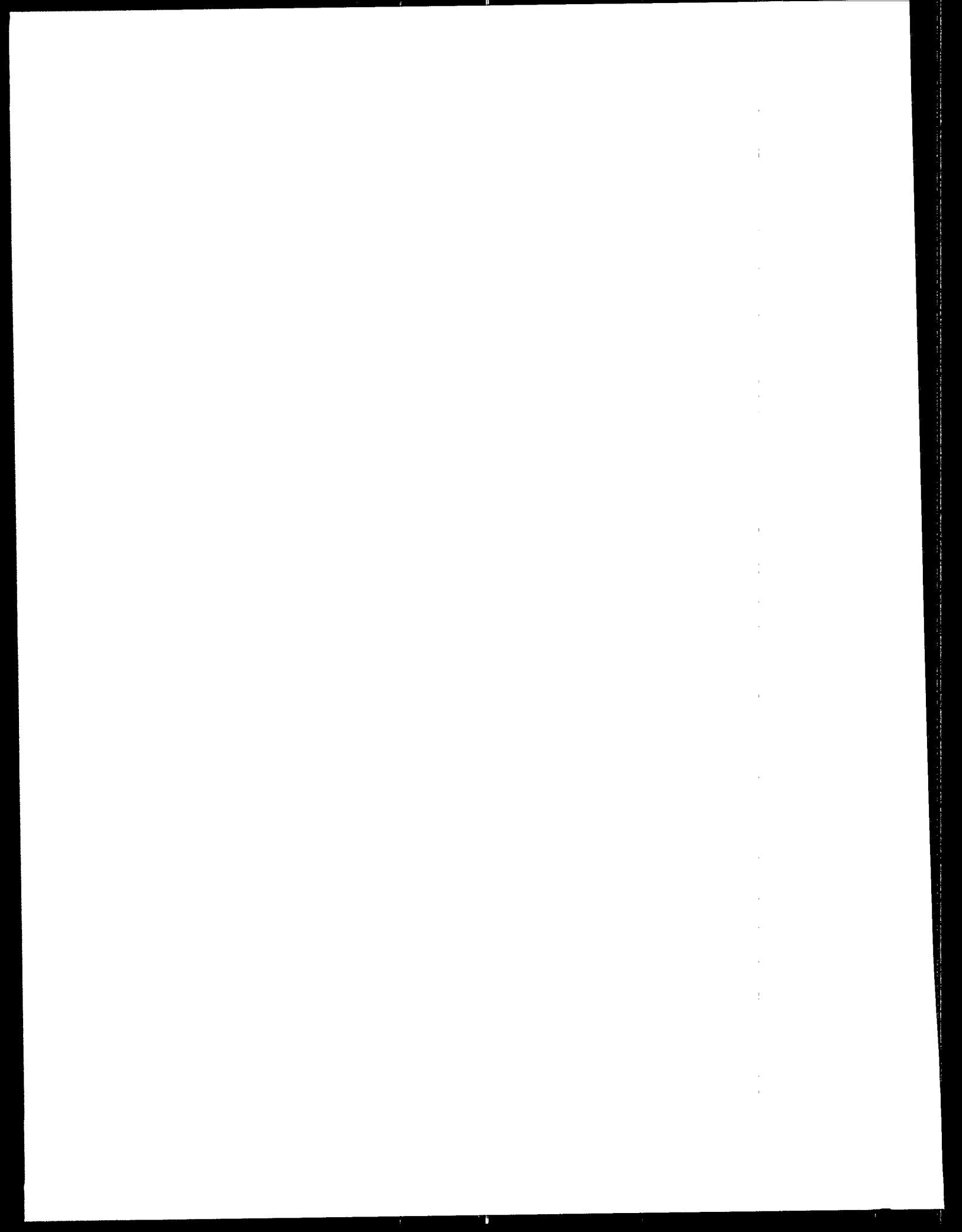


- Current User Service Charge Rate Schedule
- *Next, gather information on the current rate schedule used to bill customers. Usually wastewater usage is based on metered water usage.*
- *Determine the breakdown by class of user - residential, commercial or industrial.*
- *If the utility does not meter water sales, you will need information on types of customers such as number of single family residences, apartments, commercial users, restaurants, industrial users, etc.*
- *Overhead # 49*
- *This is an example list of un-metered users.*
- Total Wastewater Collected and Treated
- *Next, you will need to gather information on the total annual flow (expressed in gallons) through the treatment plant for the same 12 month period covered by the financial statement.*
- *This information can be obtained from wastewater plant meter readings.*
- *Total Annual Influent BOD and SS*
- *Information on annual pounds of biochemical oxygen demand (BOD) and suspended solids (SS) treated by the plant over the same 12 month period can be obtained from treatment plant records.*
- *Use overhead # 50*



WASTEWATER COLLECTION AND TREATMENT EXPENSES FY 1990

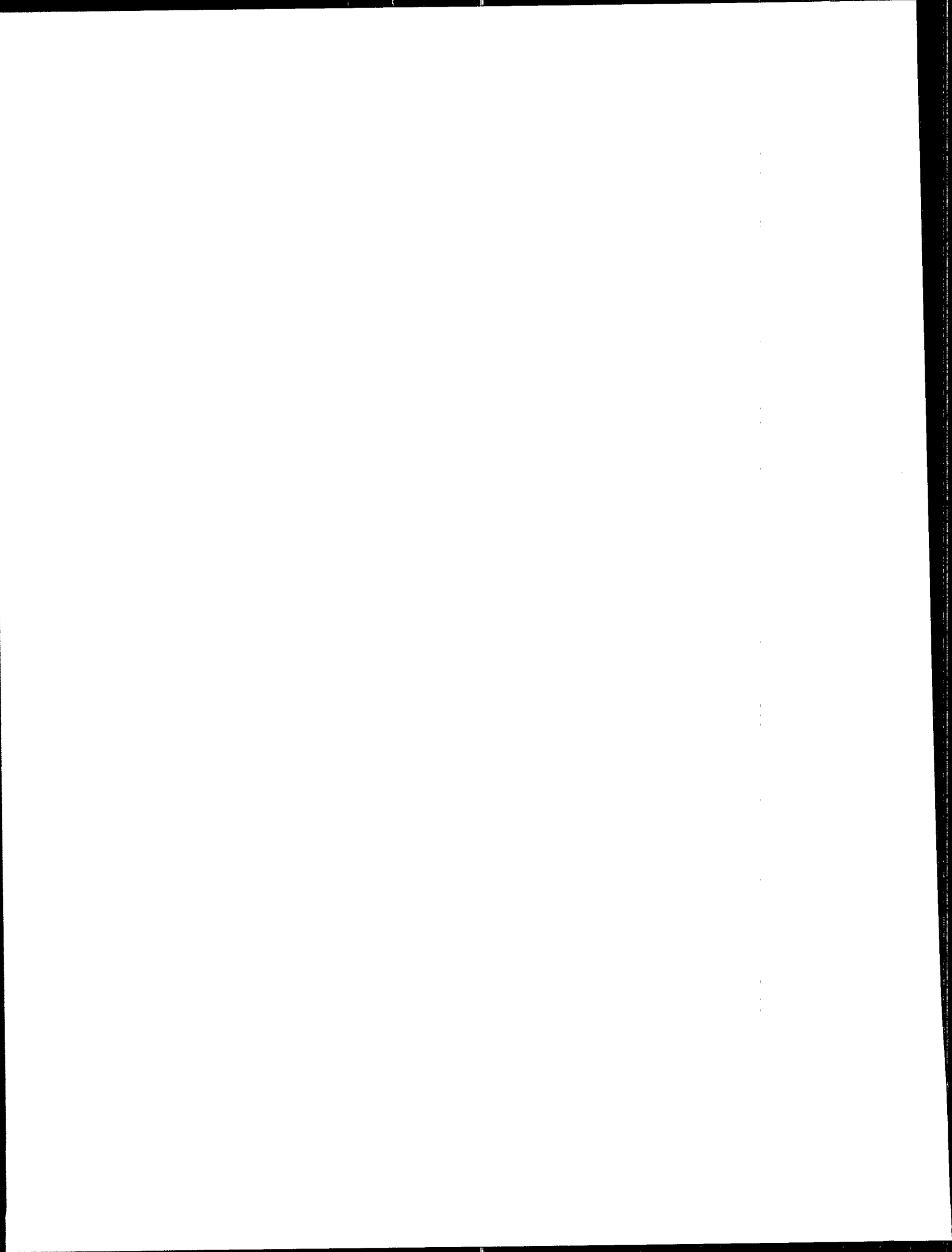
Salaries and Fringe Benefits	\$450,000
Utilities	175,000
Equipment Replacement Fund	200,000
Chemicals, Supplies and Parts	50,000
Contract Services	0
Administrative Costs & Office Supplies	125,000
Principal and Interest Payments	450,000
Other Costs	25,000
	<hr/>
TOTAL EXPENSES:	\$1,475,000



DETERMINING USER SERVICE CHARGE RATES OTHER WASTEWATER REVENUES

Connection Fees	\$15,000
Special Assessments	10,000
Transfers from Other Funds	0
Interest on Investments	50,000
Other Revenues	15,000
Minimum Service Fee	20,000

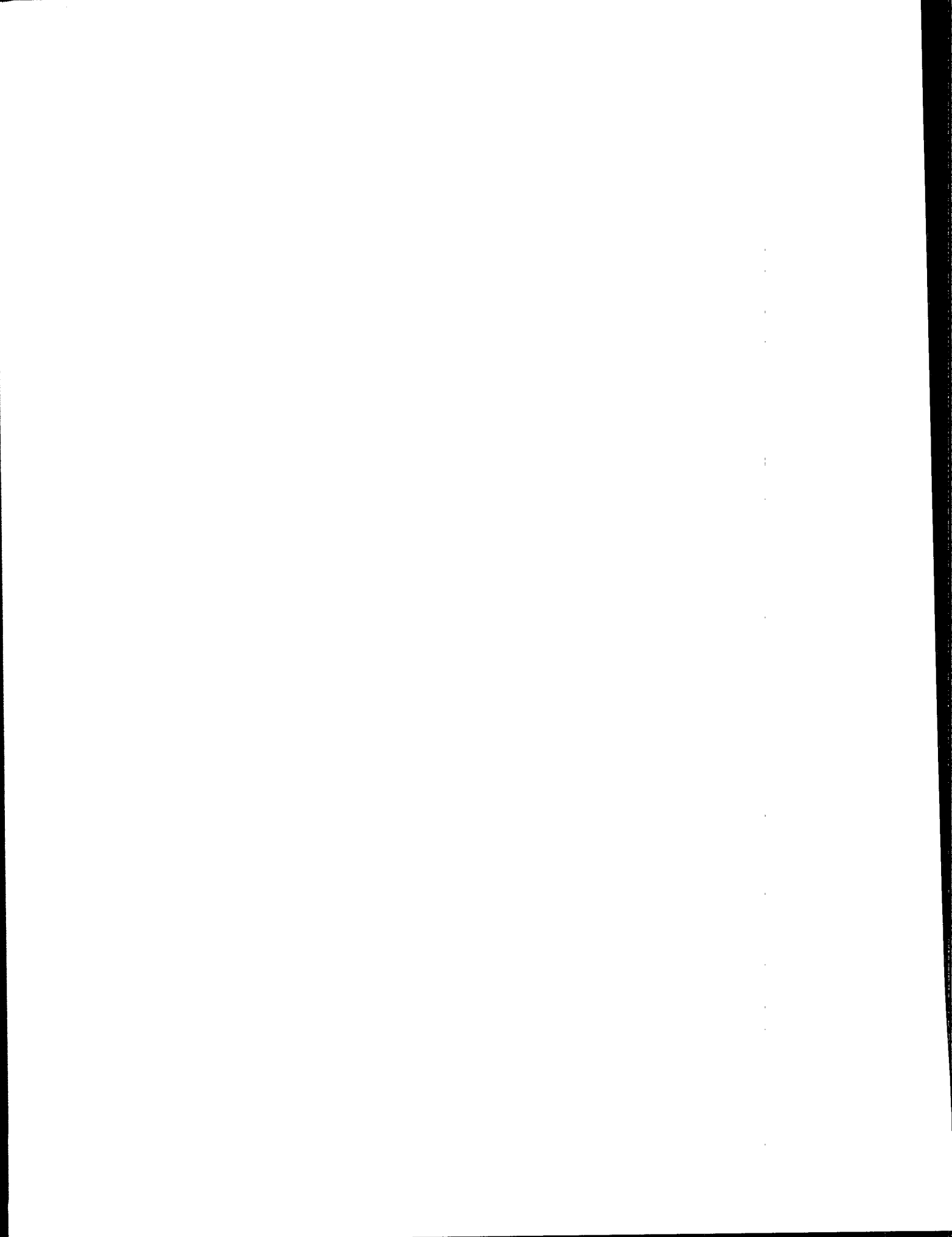
TOTAL, OTHER REVENUES: \$110,000



DETERMINING USER SERVICE CHARGE RATES

NUMBER OF USERS BY TYPE - UNMETERED WATER

TYPE OF CUSTOMER	NUMBER OF CUSTOMERS
Single-Family Residences	8,000
Apartments (1-2 bedroom)	1,500
Apartments (3 or more bedrooms)	1,000
Commercial/Institutional	900
Restaurants and Taverns	100
Industrial	100

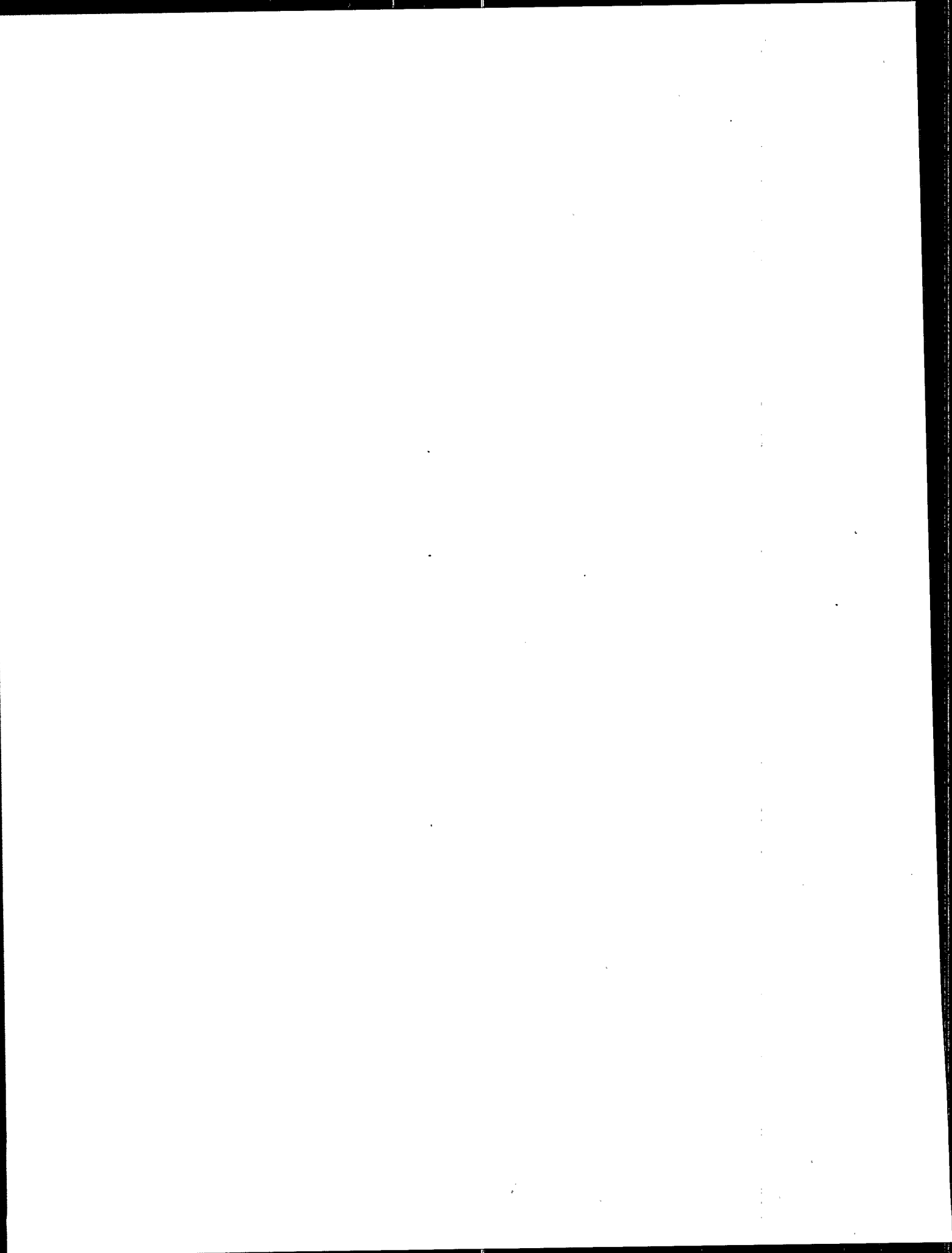


FROM STP RECORDS . . .

TOTAL ANNUAL FLOW = 700,000,000 GALLONS

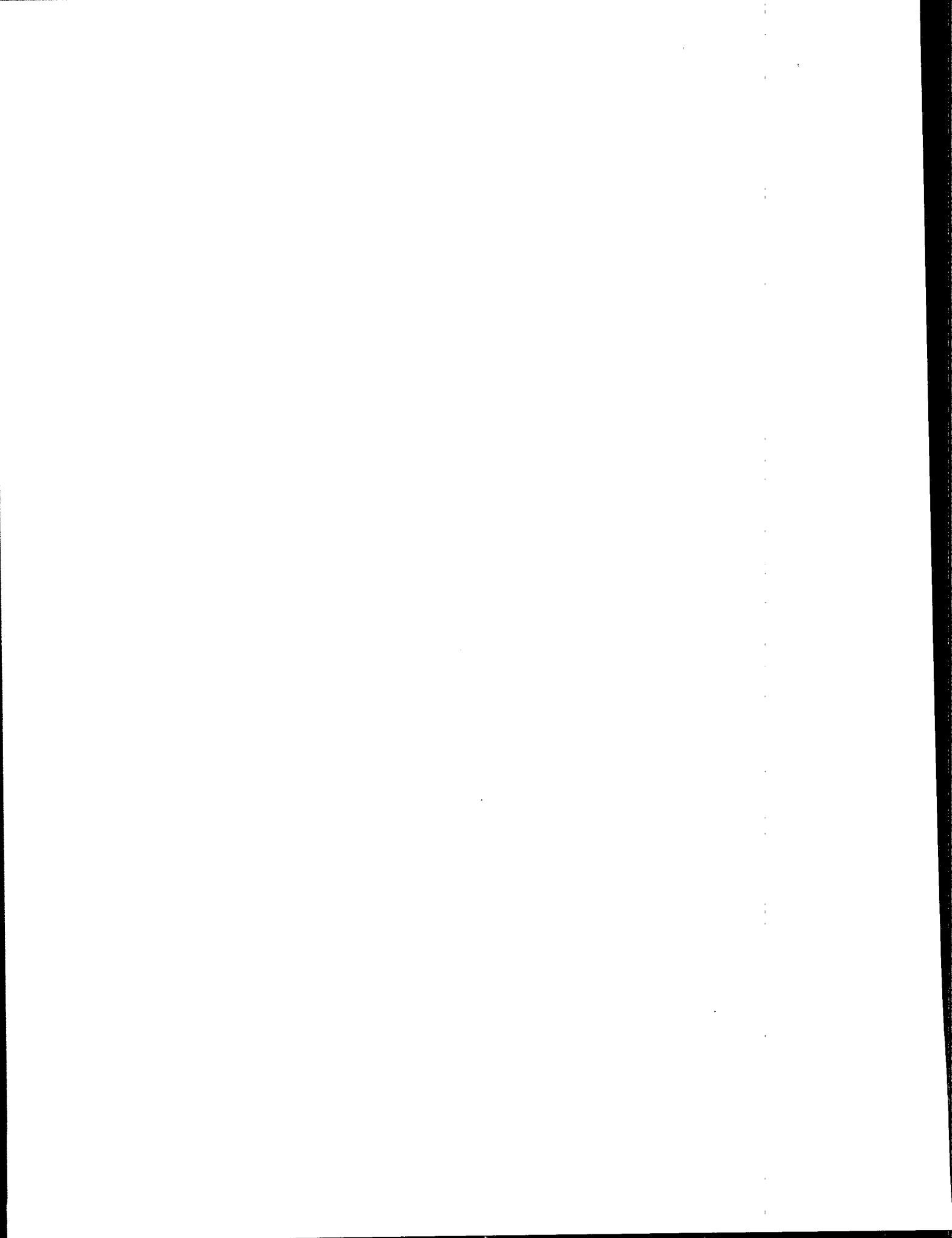
TOTAL ANNUAL BOD = 2,200,000 POUNDS

TOTAL ANNUAL SS = 2,200,000 POUNDS



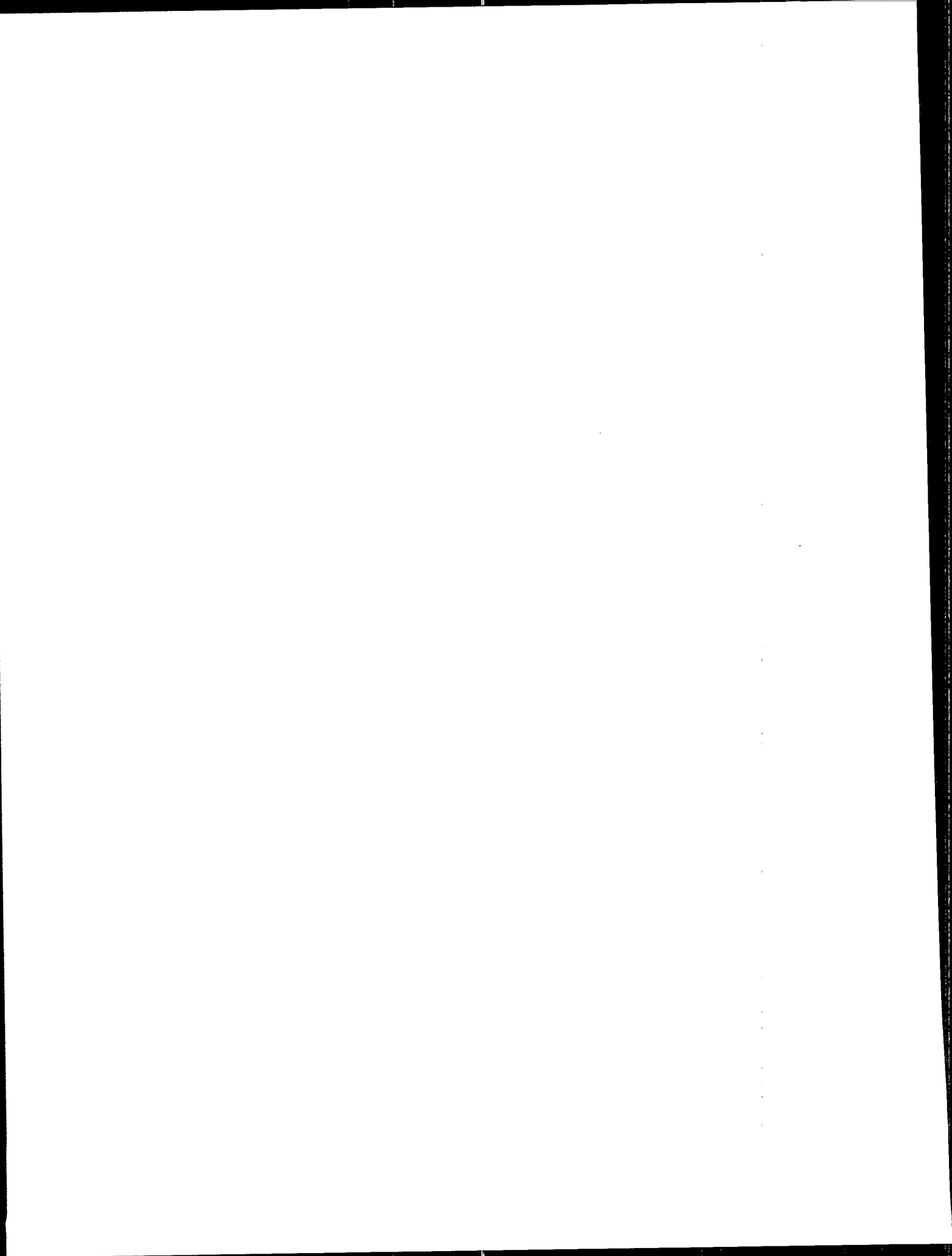
V.B. UNDERSTAND THE THEORY

- *The basic premise here is to operate the wastewater utility as a non-profit business. In other words, the wastewater utility provides a service to residents. It should not make (MUCH) money and should never, never lose money!*
- *For this to happen, revenues and expenses must balance each other.*
- *By the budgeting process, we determined the expected annual expenses.*
- *We also determined the expected annual revenues from all sources other than user charges.*
- *The big variable is USER CHARGES.*



V.C. CALCULATE USER CHARGES

- *EPA has developed a computer program which uses the information outlined above to help calculate user service charge rates. The computer program is easy to use. It can be used by those who are not proficient in computer operations, and it comes with a step-by-step instruction manual. The computer program requires an IBM-PC or PS/2 compatible computer.*
- *(Hold up booklet on calculating user charges).*
- *A major advantage of using the computer model is that assumptions can be easily changed.*
- *In this session, we will follow the same step-by step process the computer program uses, but we will determine rates manually.*
- *We will use the instruction booklet and worksheets provided with the computer program.*
- *Step 1*
- *Gather the information mentioned above: financial statements, the current rate schedule, total wastewater treated, influent biochemical oxygen demand and suspended solids and usage by customer classification.*
- *Now we are ready to go through an example.*



- Step 2

Given information:

- Overhead # 51

(1) Current rate structure:

Minimum bill = \$2.50

<u>Total Gal Treated</u>		<u>Rate per 1000 gallons</u>
<u>From</u>	<u>To</u>	
0	2,000	\$3.50
2,001	5,000	3.50
5,001	10,000	3.50
10,001	25,000	3.50
25,001	100,000	3.50
100,001	over	3.50

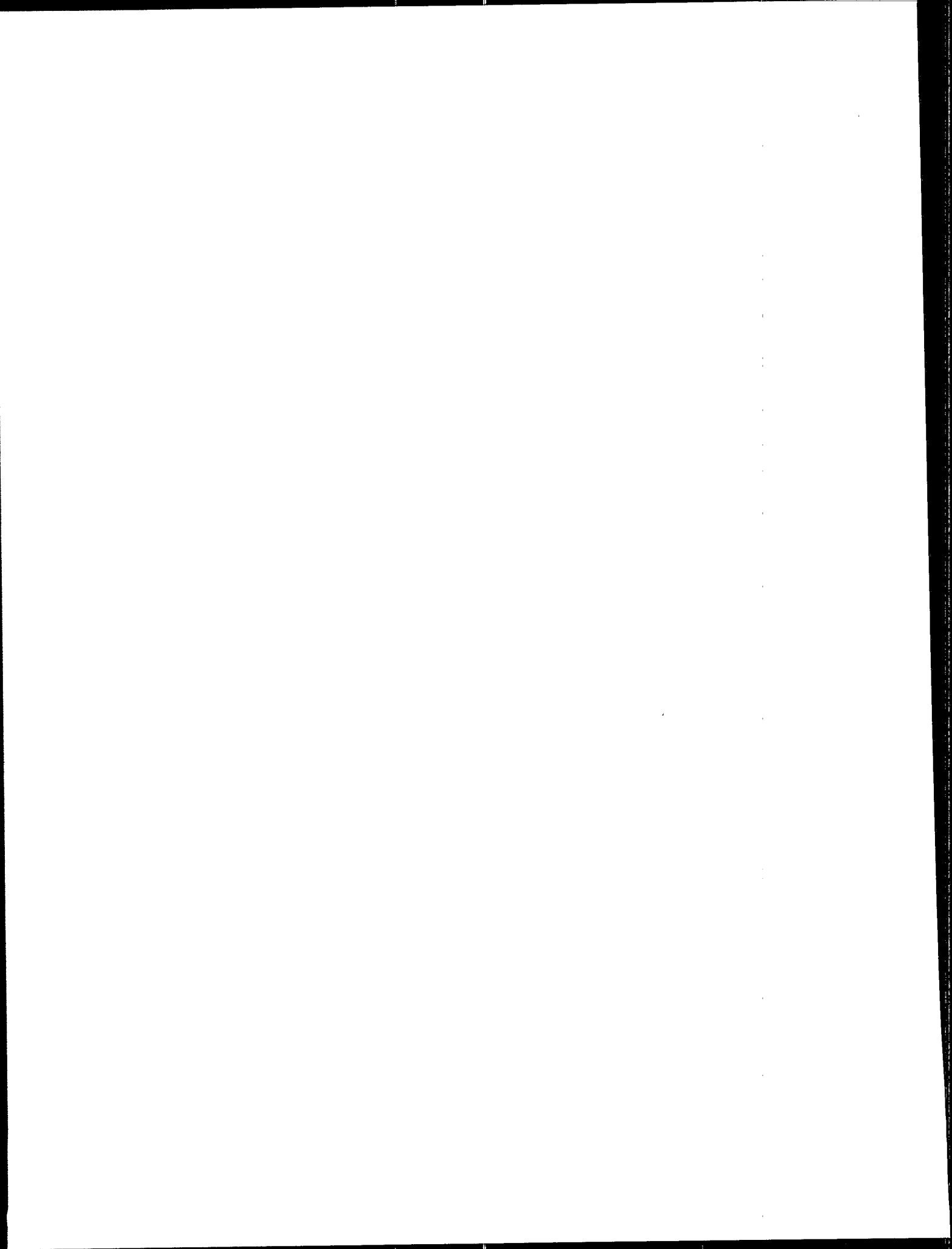
- Overhead # 52

- (2) Expenses are as previously covered.

Administration	= \$125,000
Wages and Fringe Benefits	= \$450,000
Electricity, fuel and utilities	= \$175,000
Chemicals and parts	= \$ 50,000
Equipment replacement fund	= \$200,000
Principal and interest payments	= \$450,000
Other	= \$ 25,000

Total expenses are \$1,475,000

- Overhead # 53



- (3) Revenues other than user charges are:

Connection and impact fees	= \$25,000
Taxes/assessments	= \$10,000
Interest	= \$50,000
Other	= \$ 5,000
Minimum service fee	= \$20,000

Total revenue (other than user charges) = \$110,000

- (4) Total annual wastewater flow through the treatment plant is:
700,000,000 gallons.

- Overhead # 54

We will use metered flow in this example. The computer program can be used for systems that do not use meters.

annual residential metered water flow	= 250,000,000 gallons
annual commercial metered water flow	= 100,000,000 gallons
annual industrial metered water flow	= 150,000,000 gallons
annual total metered water flow	= 500,000,000 gallons
annual total wastewater plant flow	= 700,000,000 gallons

- This wastewater system obviously has an infiltration/inflow problem.

- At this point, let's see how the information applies to the worksheets designed for use with the computer program.

- Overhead # 55

- In our example, our system has metered flow.

- (5) Normal and actual BOD and SS loadings

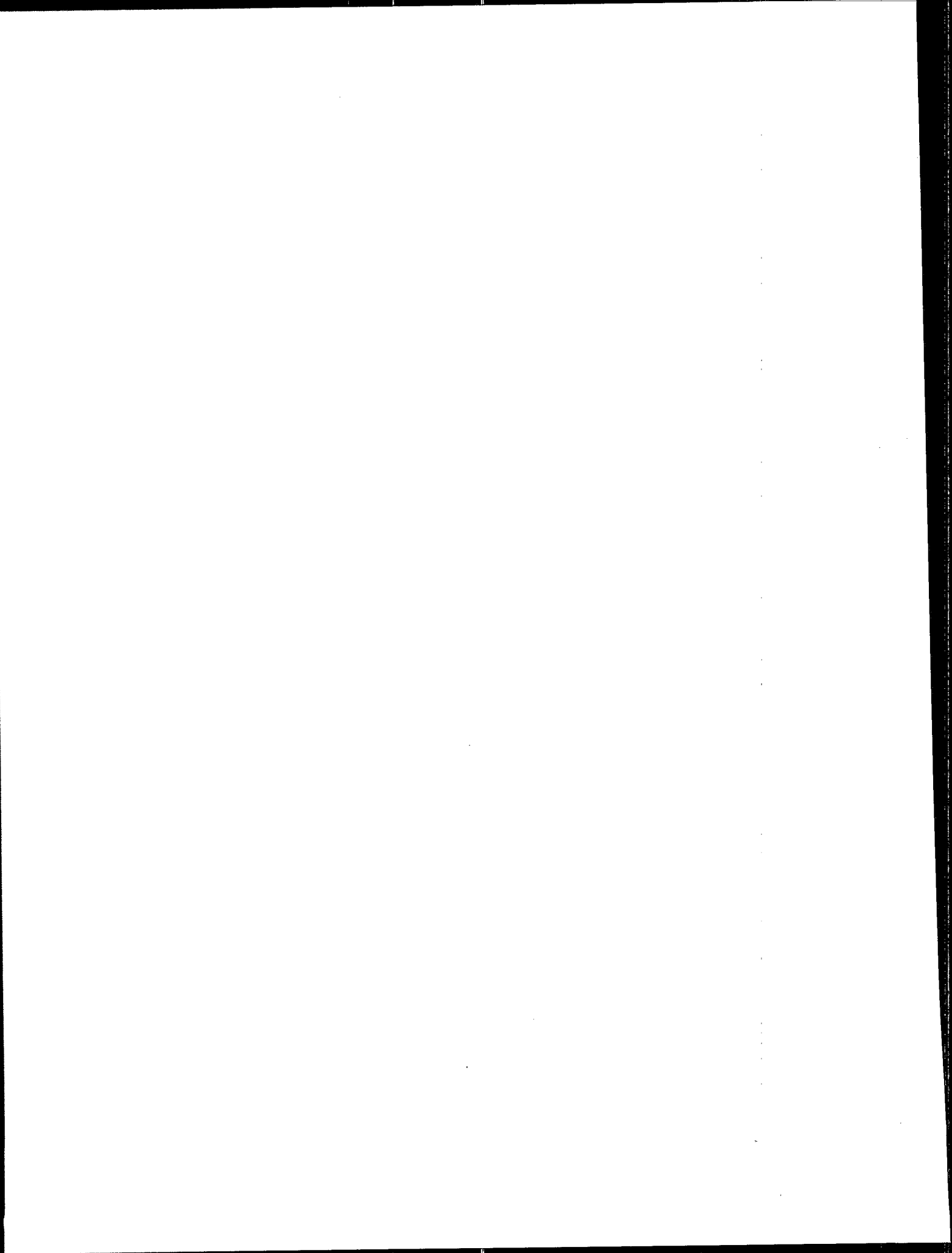
- Overhead #56

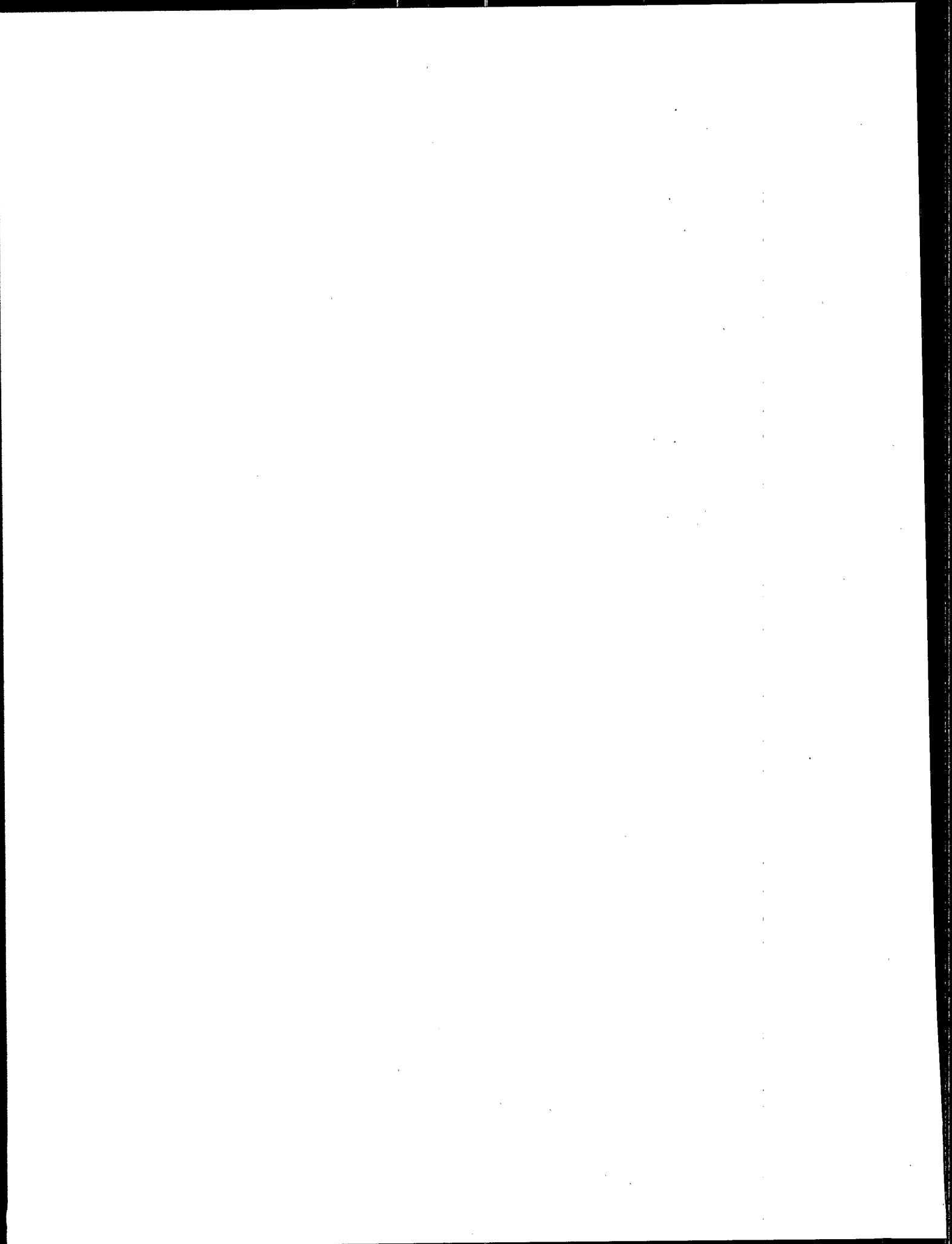
- Normal BOD and SS loadings are 0.229 lbs/100 gallons. For 500,000,000 flow, this is $0.229 \text{ lbs/100 gallons} \times 500,000,000 = 1,147,000 \text{ lbs. BOD and SS annually.}$

- Actual measured BOD is 2,200,000 lbs./year.

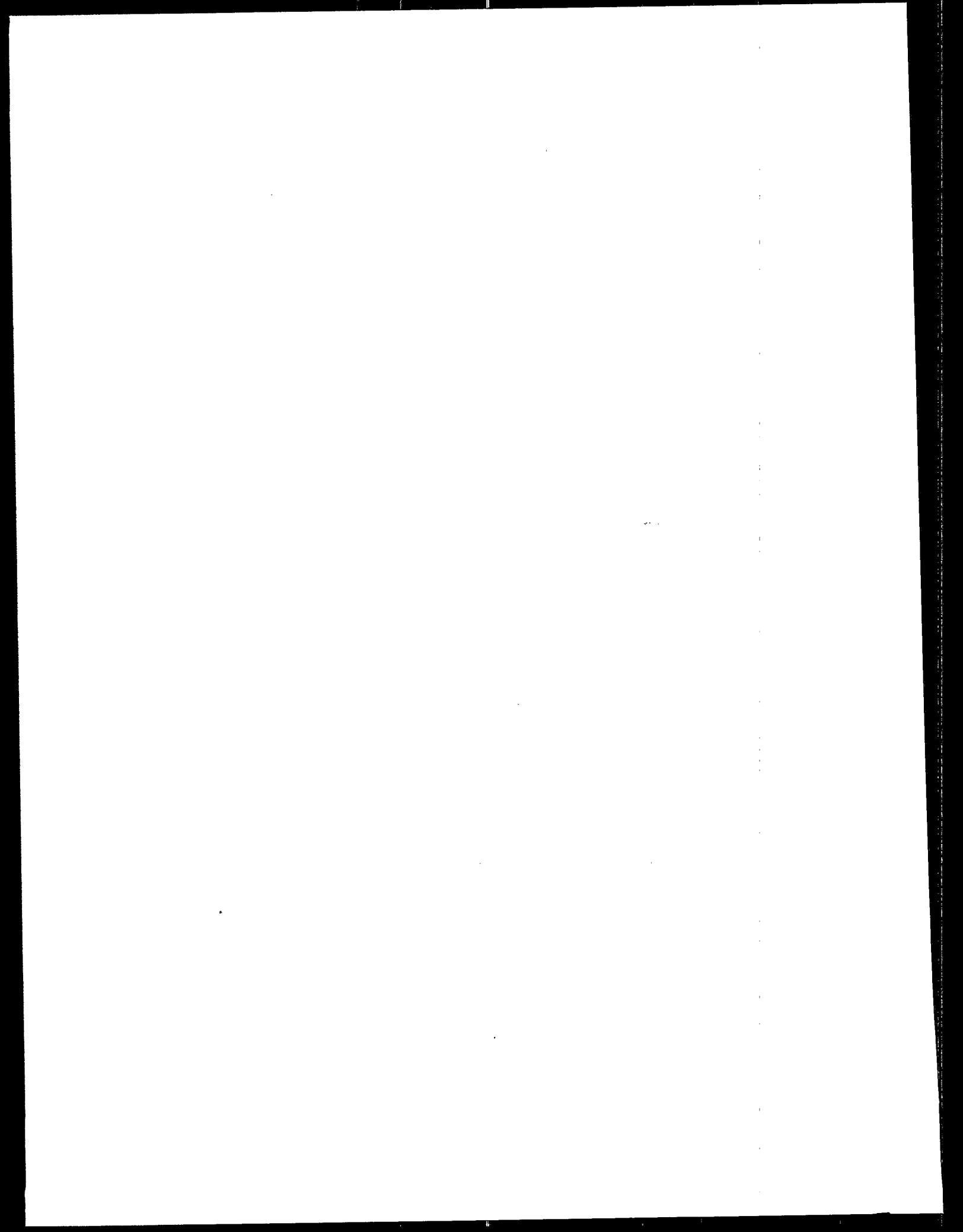
- Actual measured SS is 2,200,000 lbs./year.

- Overhead # 57





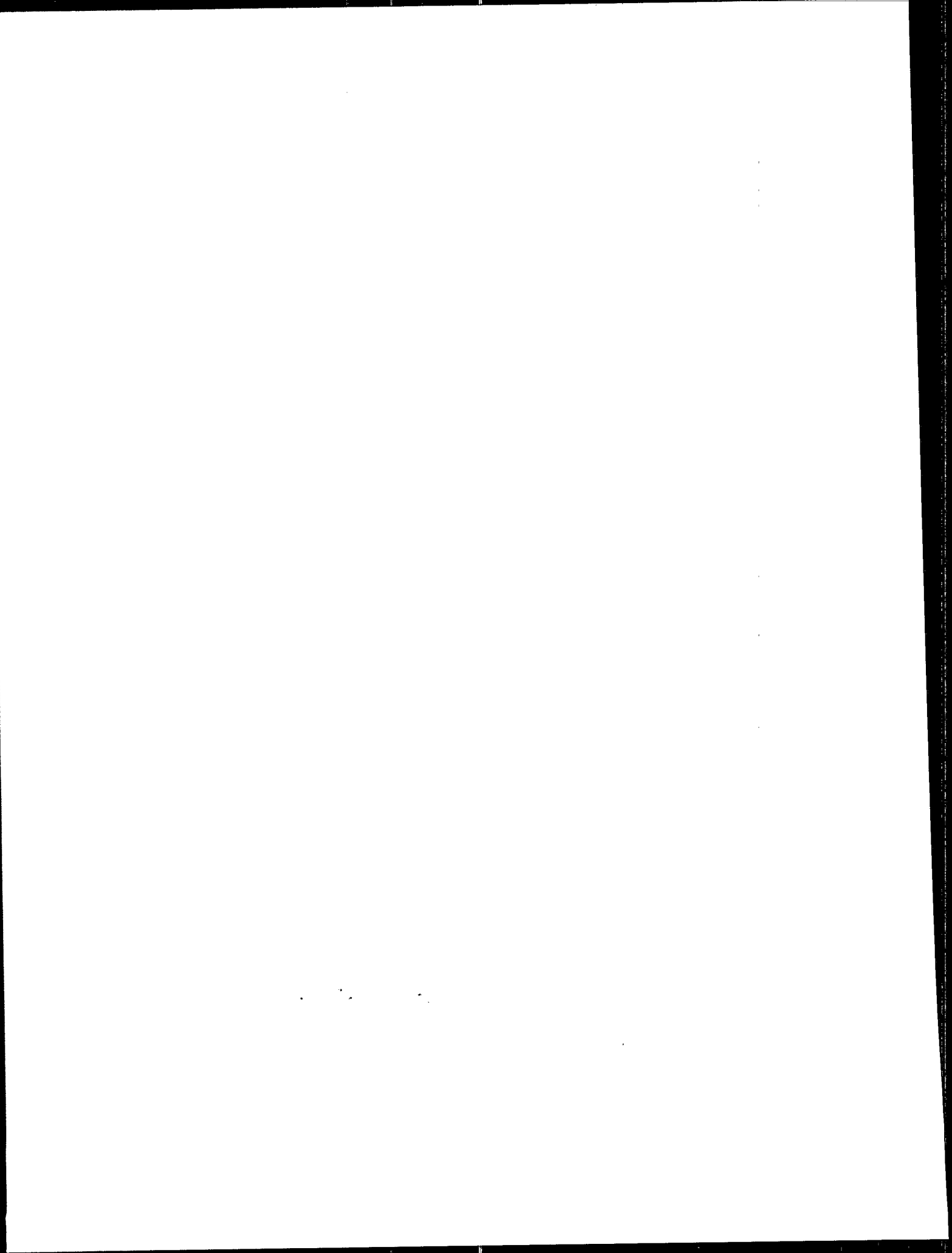
- Overhead # 62
- New user service charge rate, including infiltration/inflow (per 1,000 gallons)
= $\$1.02 \times (700,000,000 / 500,000,000) = \$1.43 / 1,000 \text{ gallons.}$
- Thus, a 7,000 gal./mo. residential user would pay $7 \times \$1.43 = \$10.01.$
- Overhead # 63
- Actual Industrial Surcharge Rate (per 1,000 gallons) = $(\$1,365,000 \times .479) / 150,000 = \$4.36/1,000 \text{ gal.}$
- Overhead # 64
- New industrial wastewater surcharge rate, including infiltration/inflow (per 1,000 gallons) = $\$4.36 \times (700,000,000 \text{ gal} / 500,000,000 \text{ gal}) = \$6.10/1,000 \text{ gallons.}$
- Total new industrial wastewater surcharge rate = $\$1.43 + \$6.10 = \$7.53$
- Thus a 100,000 gal/mo industrial user would pay $\$7.53 \times 100 = \$753/\text{mo.}$
- Overhead # 65
- Refer to worksheet number 11. We calculated lines 31 - 34b. (Discuss these calculations and allow time for questions.)
- Recall, that in section IV, we used the wastewater user service charge rate of \$3.50/1000 gallons for all customers (residential and industrial). We calculated the monthly charge for an average 7,000 gallons/mo. residential was \$24.50. Add the minimum bill of \$2.50 and this is \$27.00/mo.
- Here, we just calculated the average monthly bill for the same 7,000 gallons/mo. residential user at \$10.01. Add minimum bill and this is \$12.51.
- Since our example system has not implemented a surcharge for excess BOD and suspended solids, industries got a break in the cost of wastewater treatment. Guess who picked up the tab for the remainder? The residential (and commercial) users.
- This system needs to implement its sewer use ordinance and equitably distribute the costs of O&M among customers.



DETERMINING USER SERVICE CHARGE RATES METERED WATER

**Minimum Bill = \$2.50
Current Wastewater Services
Billing Schedule
Monthly Rates**

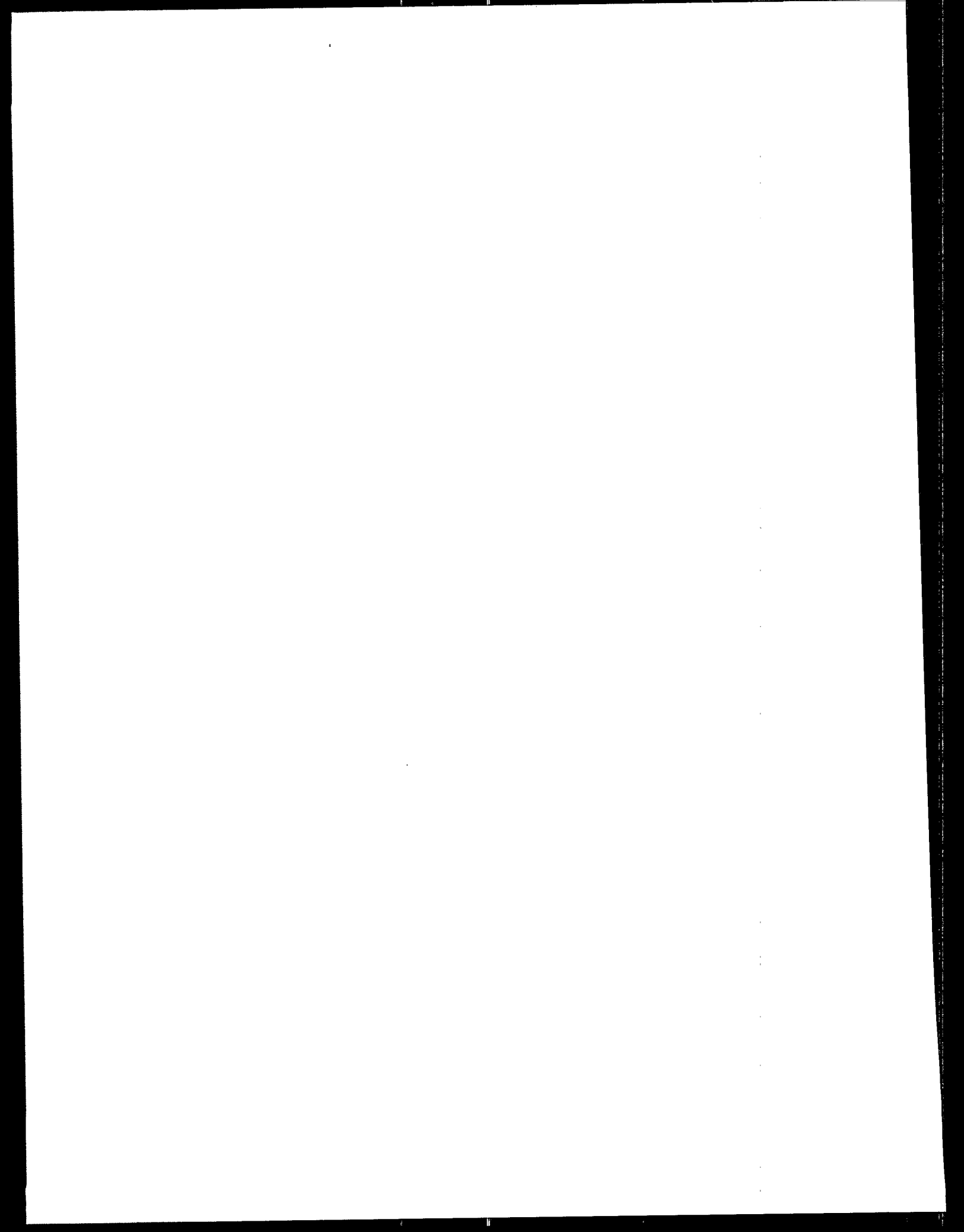
Total Gallons Treated		Rate per 1,000 gallons
<i>From . . .</i>	<i>To . . .</i>	
0	2,000	\$3.50
2,001	5,000	3.50
5,001	10,000	3.50
10,001	25,000	3.50
25,001	Over	3.50



WASTEWATER COLLECTION AND TREATMENT EXPENSES FY 1990

Salaries and Fringe Benefits	\$450,000
Utilities	175,000
Equipment Replacement Fund	200,000
Chemicals, Supplies and Parts	50,000
Contract Services	0
Administrative Costs & Office Supplies	125,000
Principal and Interest Payments	450,000
Other Costs	25,000
	<hr/>
TOTAL EXPENSES:	\$1,475,000

(WORKSHEET 9, LINE 20)

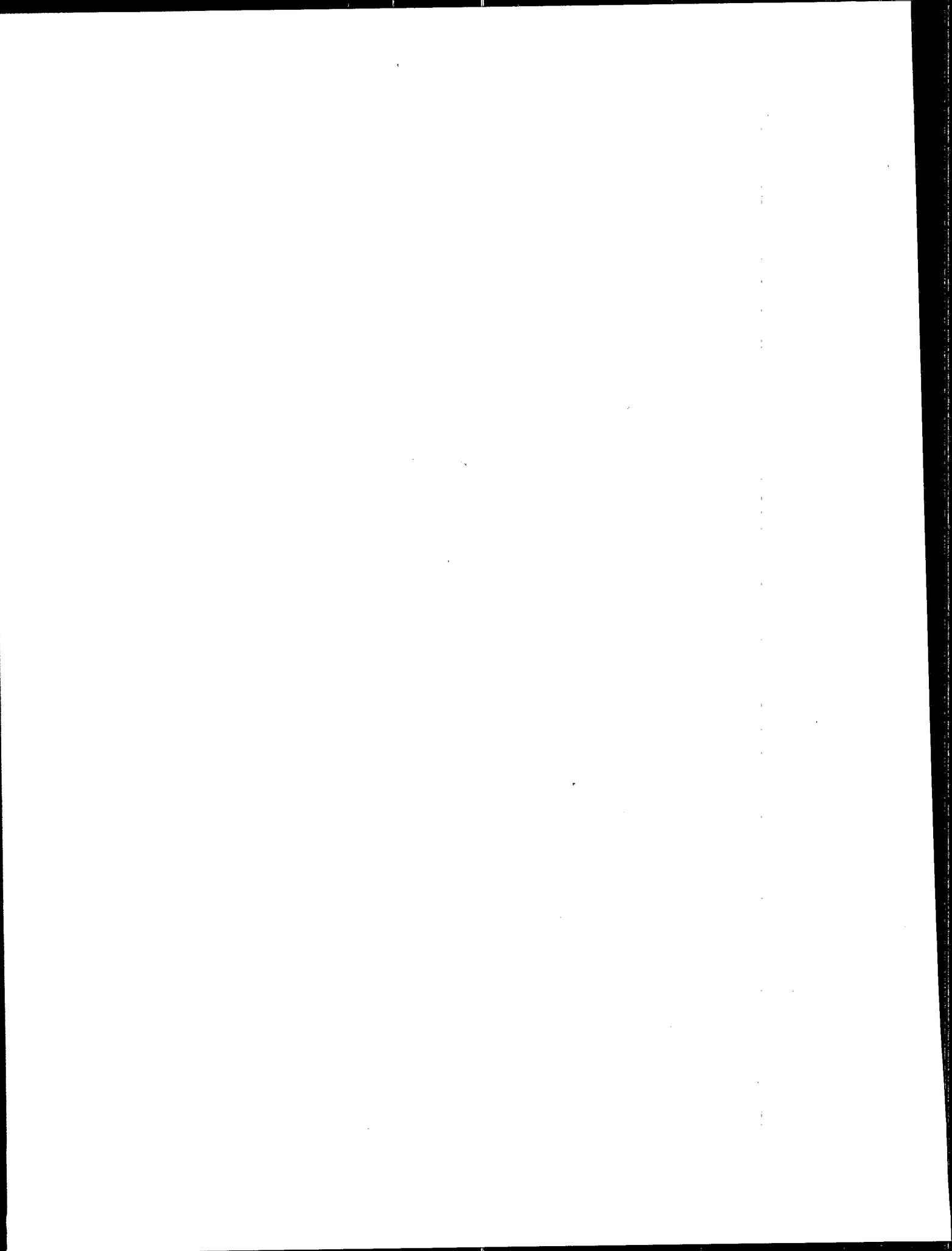


DETERMINING USER SERVICE CHARGE RATES OTHER WASTEWATER REVENUES

Connection Fees	\$15,000
Special Assessments	10,000
Transfers from Other Funds	0
Interest on Investments	50,000
Other Revenues	15,000
Minimum Service Fee	20,000

TOTAL, OTHER REVENUES: \$110,000

(WORKSHEET 9, LINE 21)



ANNUAL METERED WATER FLOW

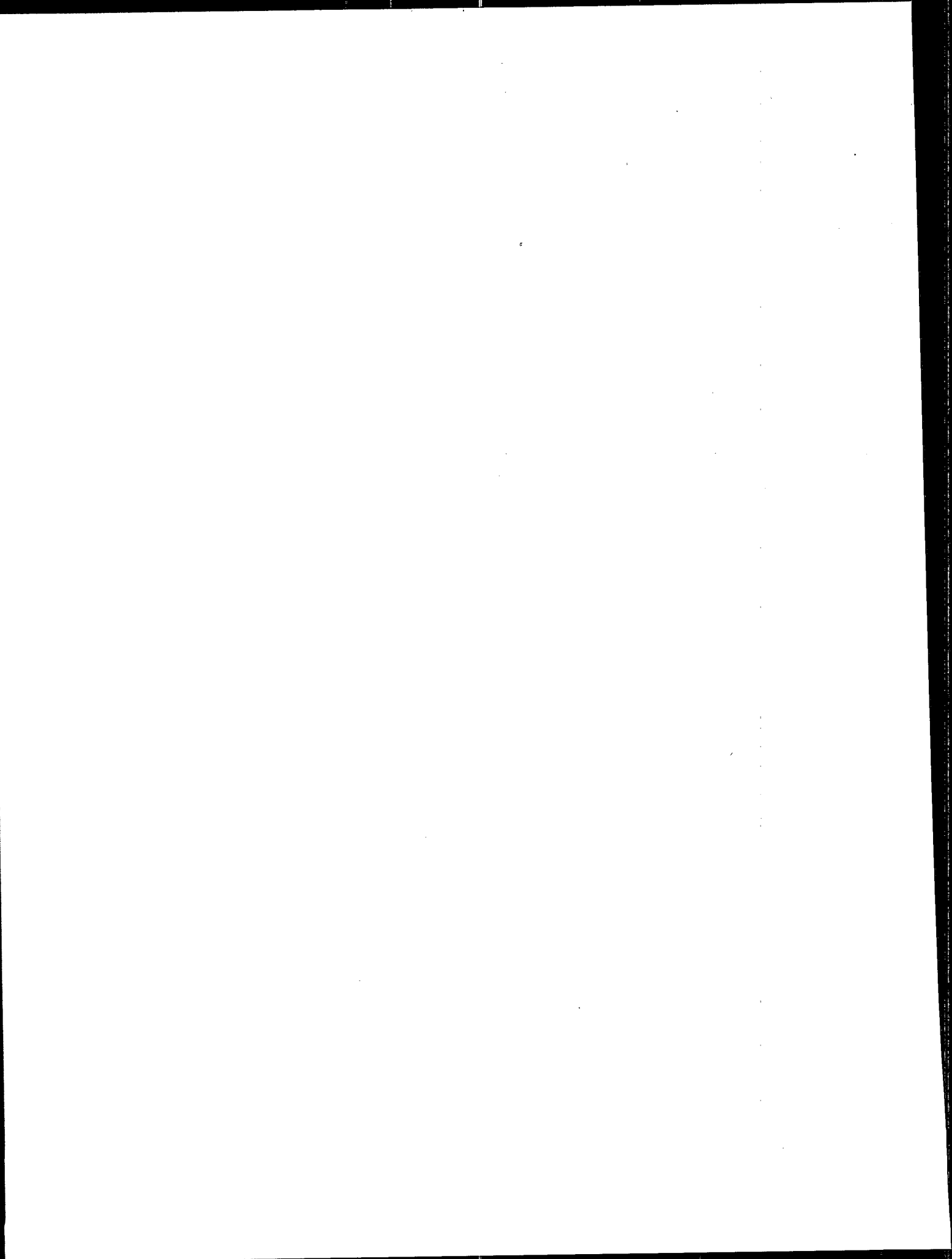
Residential	250,000,000 gallons
Commercial	100,000,000 gallons
Industrial	150,000,000 gallons
TOTAL	<hr/> 500,000,000 gallons

(WORKSHEET 8, LINE 4)

**Annual Total
Wastewater
Flow**

700,000,000 gallons

(WORKSHEET 8, LINE 4a)



WORKSHEET 8

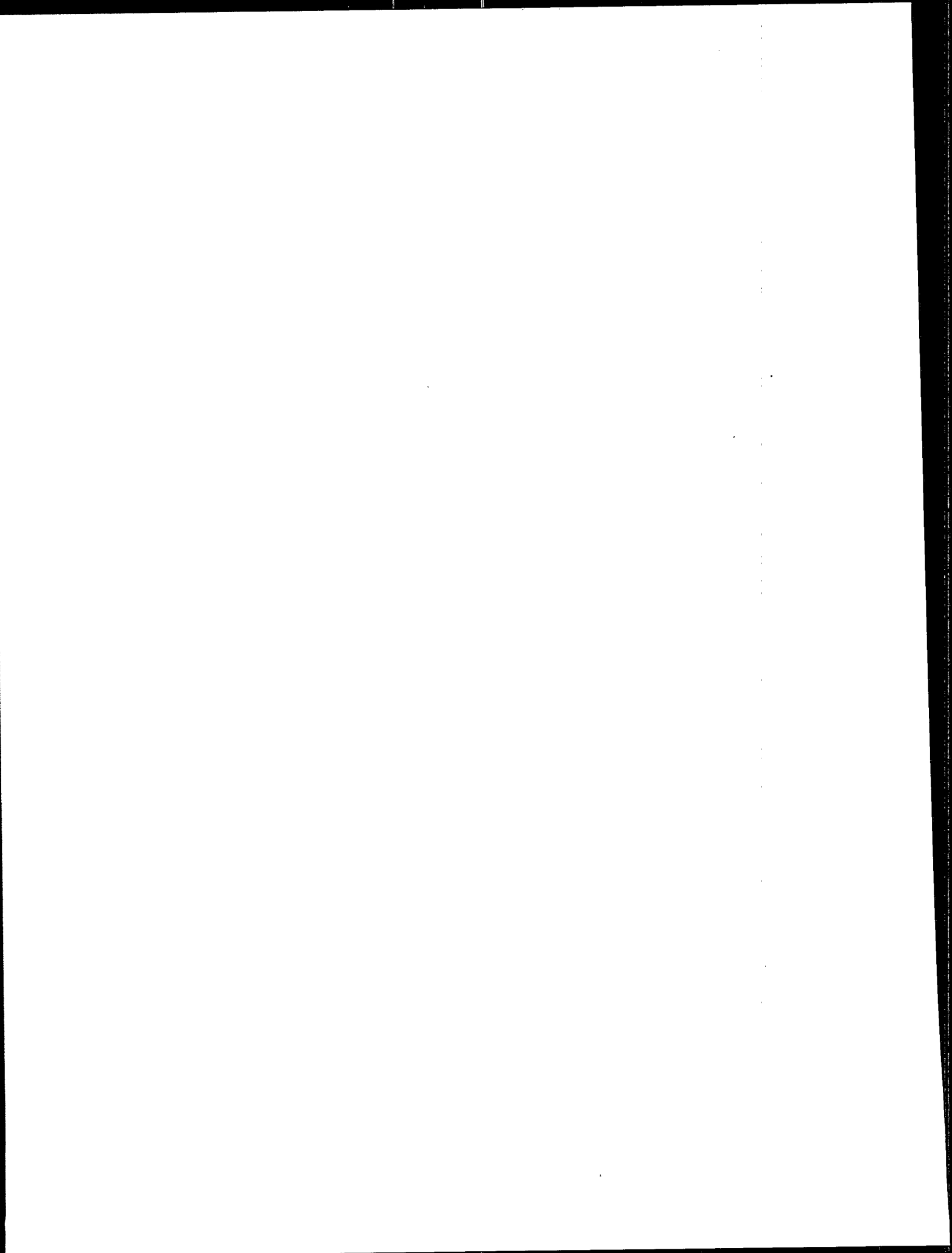
If you meter fresh water, fill in items 1 through 4.

If you don't meter fresh water, enter only item 4a.

Annual Residential Metered Water Flow (gallons)	<u>250,000,000</u>	1
Annual Commercial/Institutional Metered Water Flow (gallons)	<u>100,000,000</u>	2
Annual Industrial Metered Water Flow (gallons)	<u>150,000,000</u>	3
Total Annual Metered Water Flow (1+2+3)	<u>500,000,000</u>	4
Total Annual Wastewater Flow	<u>700,000,000</u>	4a

If you don't meter fresh water, fill in Items 5 - 11a.

Type of Unit	Number of Units	EDUs per unit	Total EDUs (Units x EDUs per)	
Single family residences	_____	1.00	_____	5
Apartments (1-2 bedrooms)	_____	0.75	_____	6
Apartments (3+ bedrooms)	_____	1.00	_____	7
Commercial/Institutional	_____	2.50	_____	8
Restaurants and taverns	_____	10.00	_____	9
Industries	_____			
Grand Total EDUs (5+6+7+8+9)			_____	10



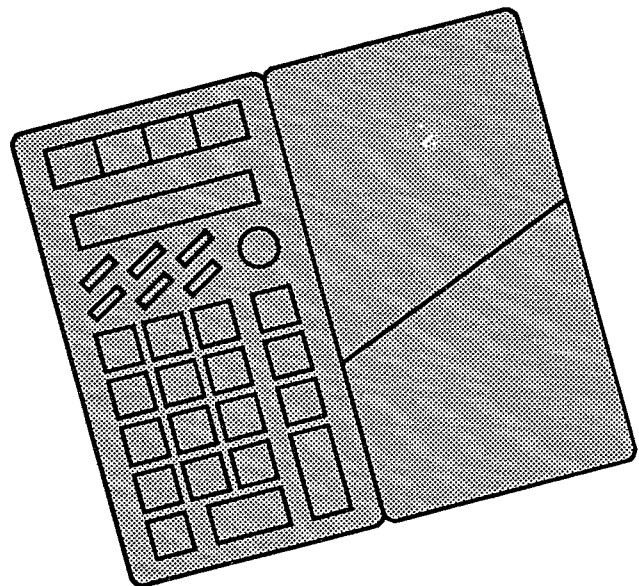
Normal BOD and SS loadings
0.229 lbs./100 gallons of wastewater

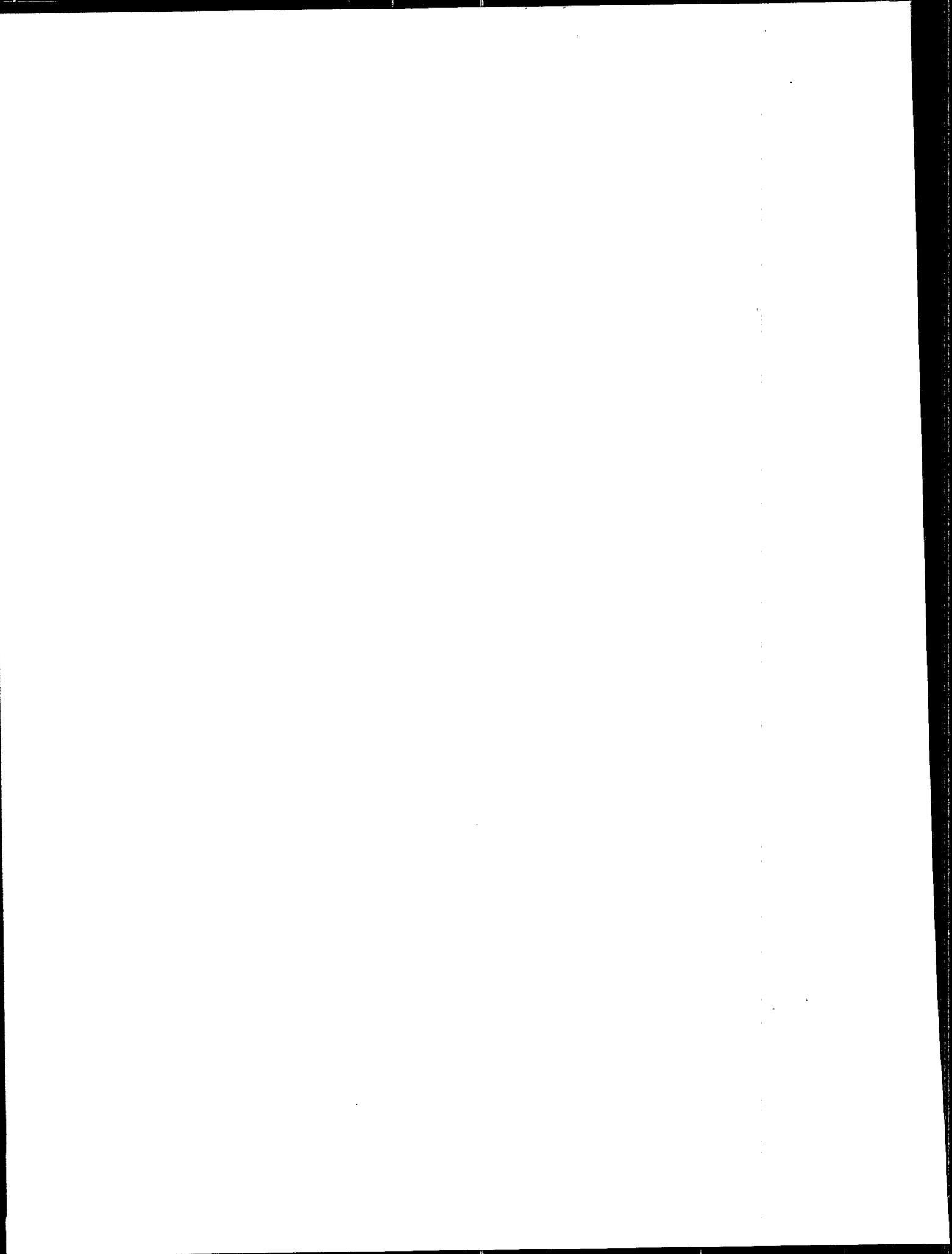
$$0.229 \text{ lbs./100 gallons} \times 500,000,000 \text{ gallons} = 1,147,000 \text{ lbs. BOD or SS}$$

(WORKSHEET 9, LINES 13 AND 17)

Actual BOD or SS = 2,200,000 lbs.

(WORKSHEET 9, LINES 12 AND 16)





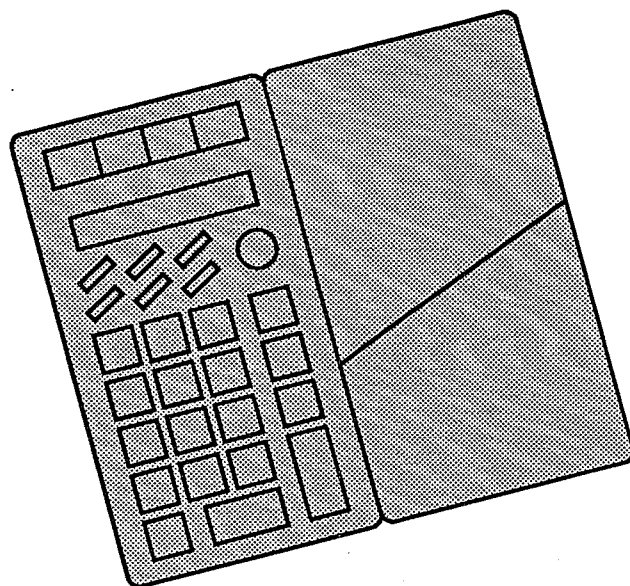
Excess BOD and SS

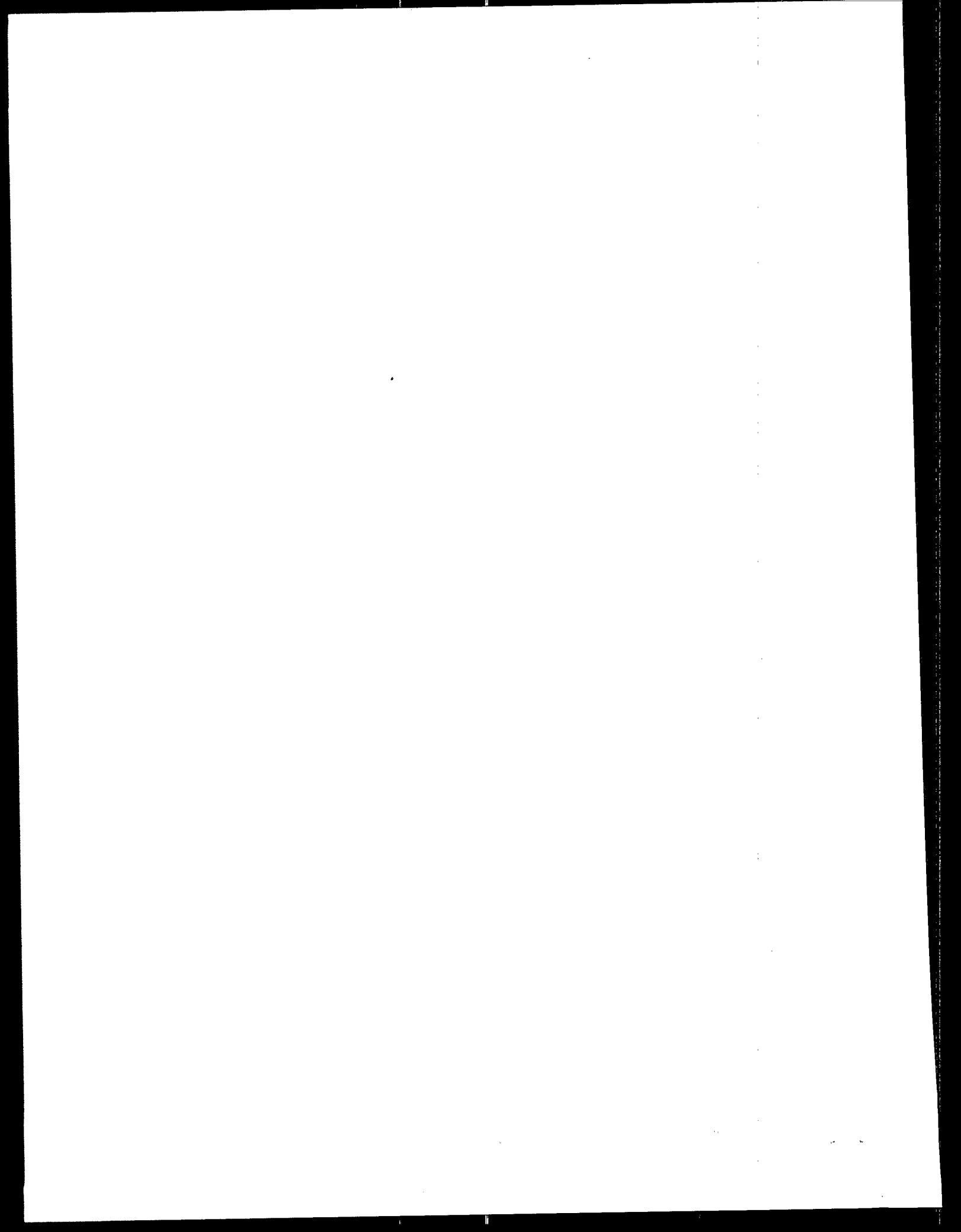
$$\begin{array}{r} 2,200,000 \text{ lbs.} \\ - 1,147,000 \text{ lbs.} \\ \hline \end{array}$$

$$1,053,000 \text{ lbs.}$$

$$\% \text{ Excess} = \frac{1,053,000}{1,147,000} \times 100\% = 91.8\%$$

(WORKSHEET 9, LINES 15 AND 19)





WORKSHEET 9

Theoretical Non-Industrial Wastewater Flow

[Item 10 *times* 2.6 people *times*

100 gallons per day *times* 365 days]

11

Theoretical Industrial Wastewater Flow

[Item 4 *minus* Item 11]

11a

For both metered and unmetered systems, fill in Items 12 - 19, and 20 - 23 or 26 - 32.

Total Annual Influent BOD (pounds)

2,200,000 12

Calculate Normal Annual Influent BOD (pounds)

[Item 4a *times* .002294 pounds per gallon]

1,147,000 13

Calculate Excess BOD

[Item 12 *minus* Item 13] If Item 12 is less than Item 13, enter 0.

1,053,000 14

Percentage Excess BOD

[(Item 14 *divided by* Item 13) x 100]

91.8 15

Total Annual Influent SS (pounds)

2,200,000 16

Calculate Normal Annual Influent SS (pounds)

[Item 4a *times* .002294 pounds per gallon]

1,147,000 17

Calculate Excess SS

[Item 16 *minus* Item 17] If Item 16 is less than Item 17, enter 0.

1,053,000 18

Percentage Excess SS

[(Item 18 *divided by* Item 17) *times* 100]

91.8 19

If both Items 15 and 19 equal zero, then complete Items 20 through 23 and the appropriate metered item (24) or unmetered items (25 through 25e).

Total Expenses (see pages 11-16)

20

Other Revenue (see pages 17-18)

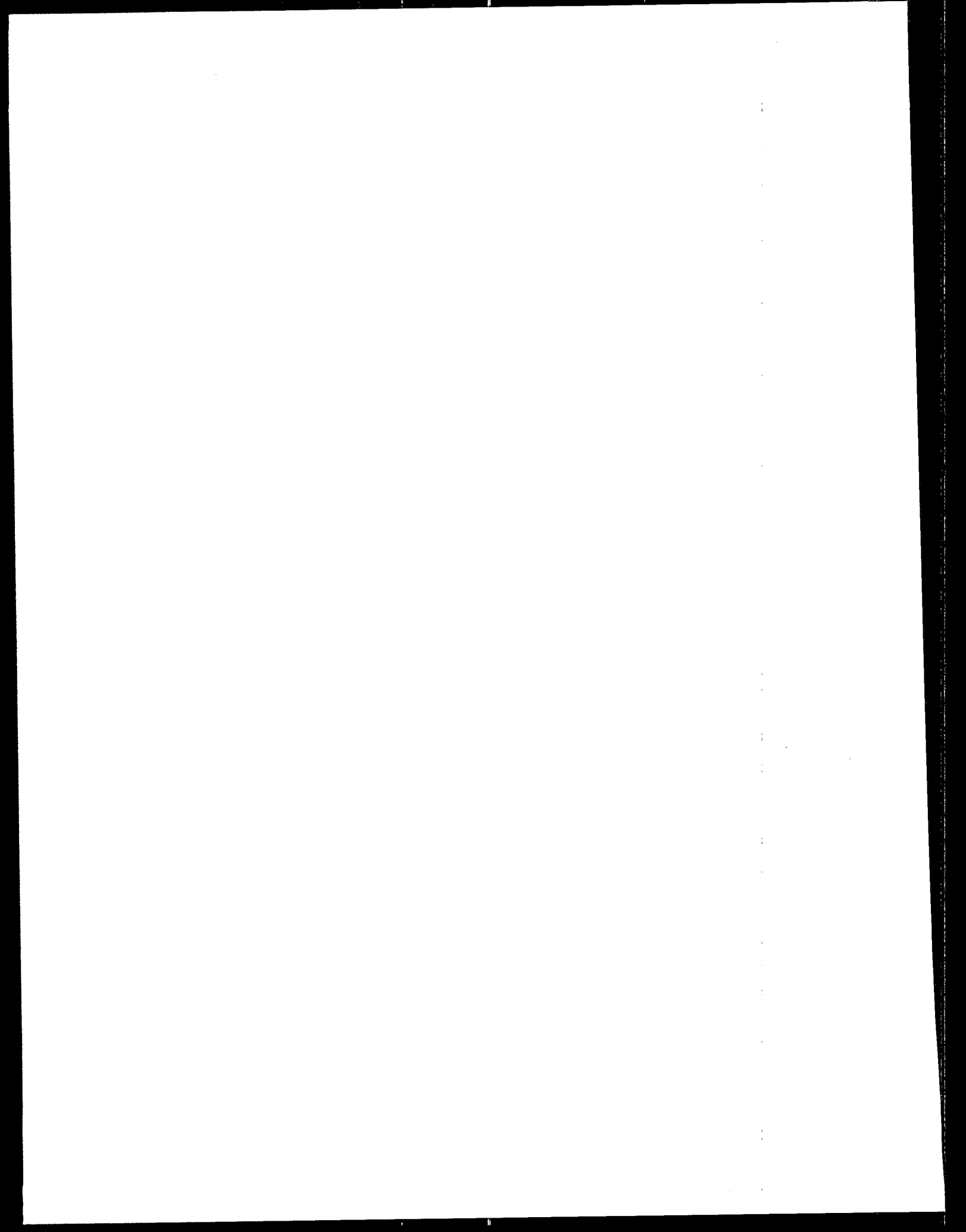
21

Net Expenses [Item 20 *minus* Item 21]

22

1,000s of Gallons Wastewater [Item 4a *divided by* 1,000]

23



WORKSHEET 10

Metered Water

Actual Wastewater Rate (per 1,000 gallons)
[Item 22 divided by Item 23]

_____ 24

New User Service Charge Rate (per 1,000 gallons)
[Item 24 times (Item 4a divided by Item 4)]

_____ 24a

Unmetered Water

New User Service Charge Rate (per 1,000 gallons)
[Item 22 divided by Item 23]

_____ 25

Residential, per month
[Item 25 times 7.8 thousand gallons/month]

_____ 25a

Apartments, 1-2 bedroom, per month
[Item 25a times 0.75]

_____ 25b

Apartments, 3+ bedrooms, per month
[Item 25a times 1.00]

_____ 25c

Commercial/Institutional, per month
[Item 25a times 2.50]

_____ 25d

Restaurants/Taverns, per month
[Item 25a times 10.00]

_____ 25e

If either item 15 or 19 is greater than zero, then complete Items 26 through 32 and the appropriate metered items (33 and 34) or unmetered items (35 through 36).

Total Expenses (see pages 11-16)

1,475,000 26

Other Revenue (see pages 17-18)

110,000 27

Net Expenses [Item 26 minus Item 27]

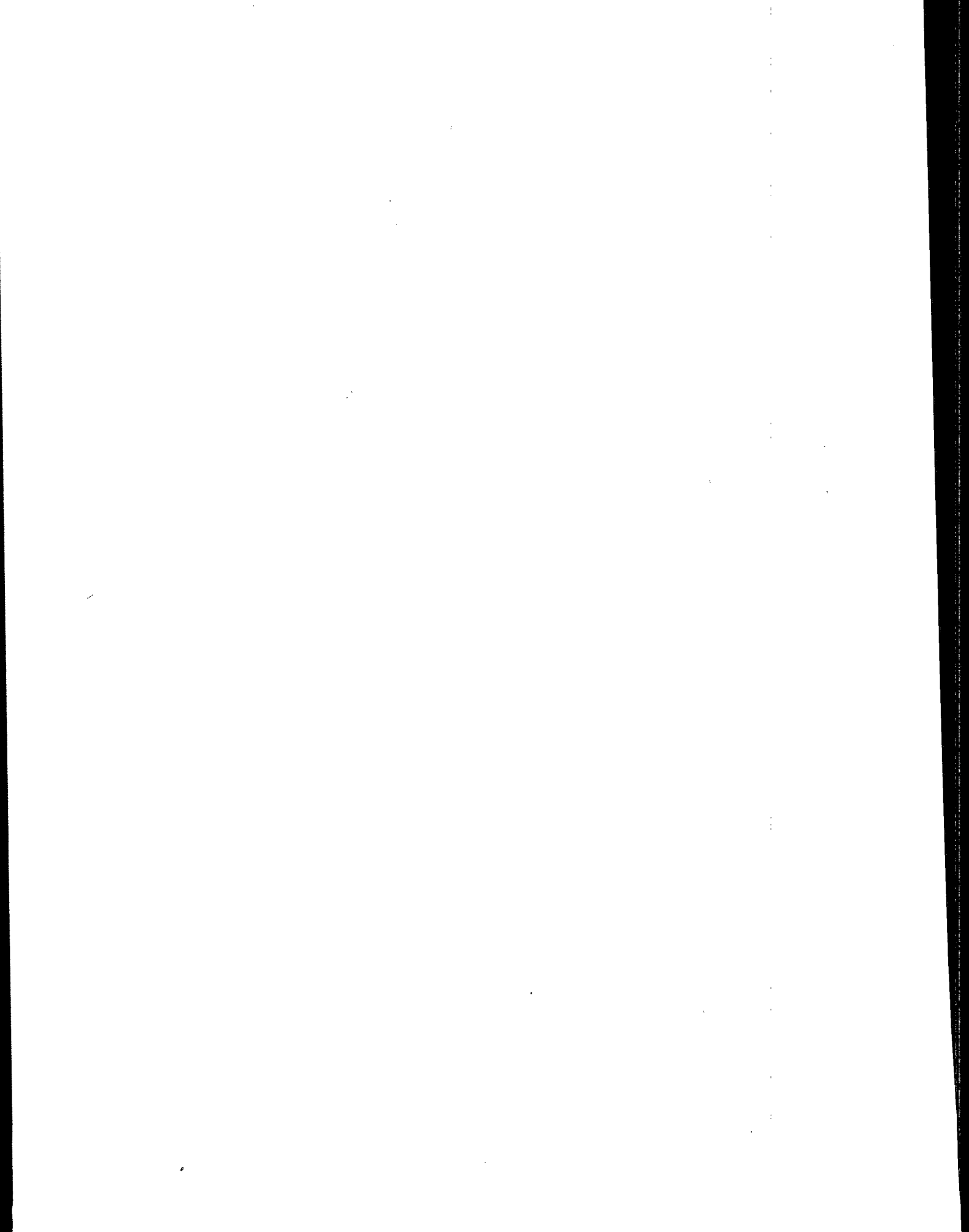
1,365,000 28

1,000s of Gallons Wastewater [Item 4a divided by 1,000]

700,000 29

Enter Item 15 or 19, whichever is greater

91.8 % 30



**Portion of treatment cost
attributable to
normal strength wastewater**

$$100 \div (100 + 91.8) =$$

.521 or 52.1%

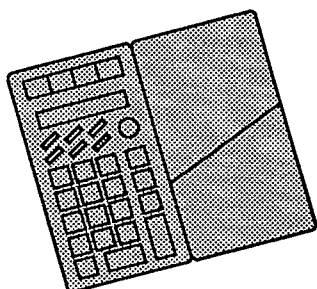
(WORKSHEET 11, LINE 31)

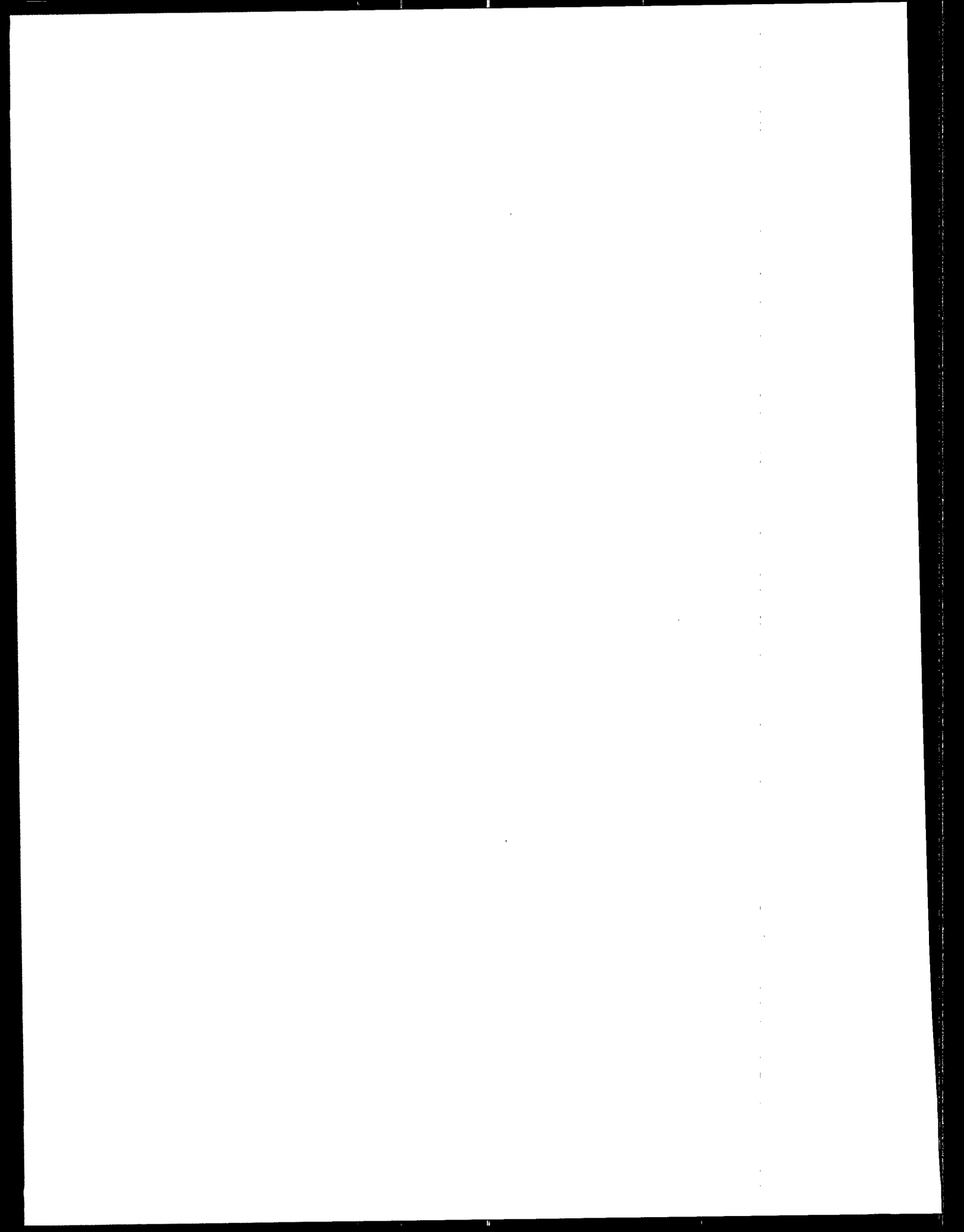
**Portion attributable to
excess BOD or SS**

$$\begin{array}{r} 100.0\% \\ - 52.1\% \\ \hline \end{array}$$

47.9%

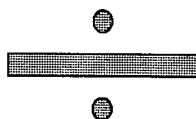
(WORKSHEET 11, LINE 32)





ACTUAL WASTEWATER RATE/1,000 GALLONS =

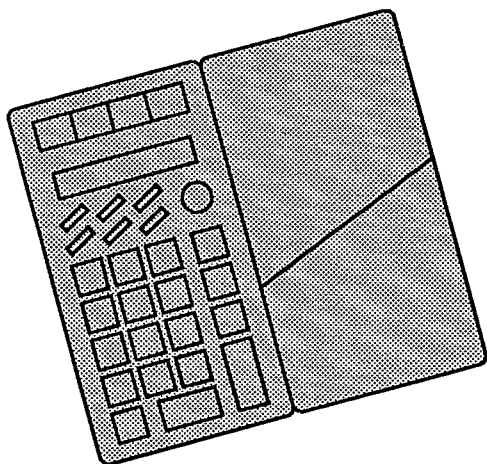
Net expenses x portion attributable to normal BOD or SS

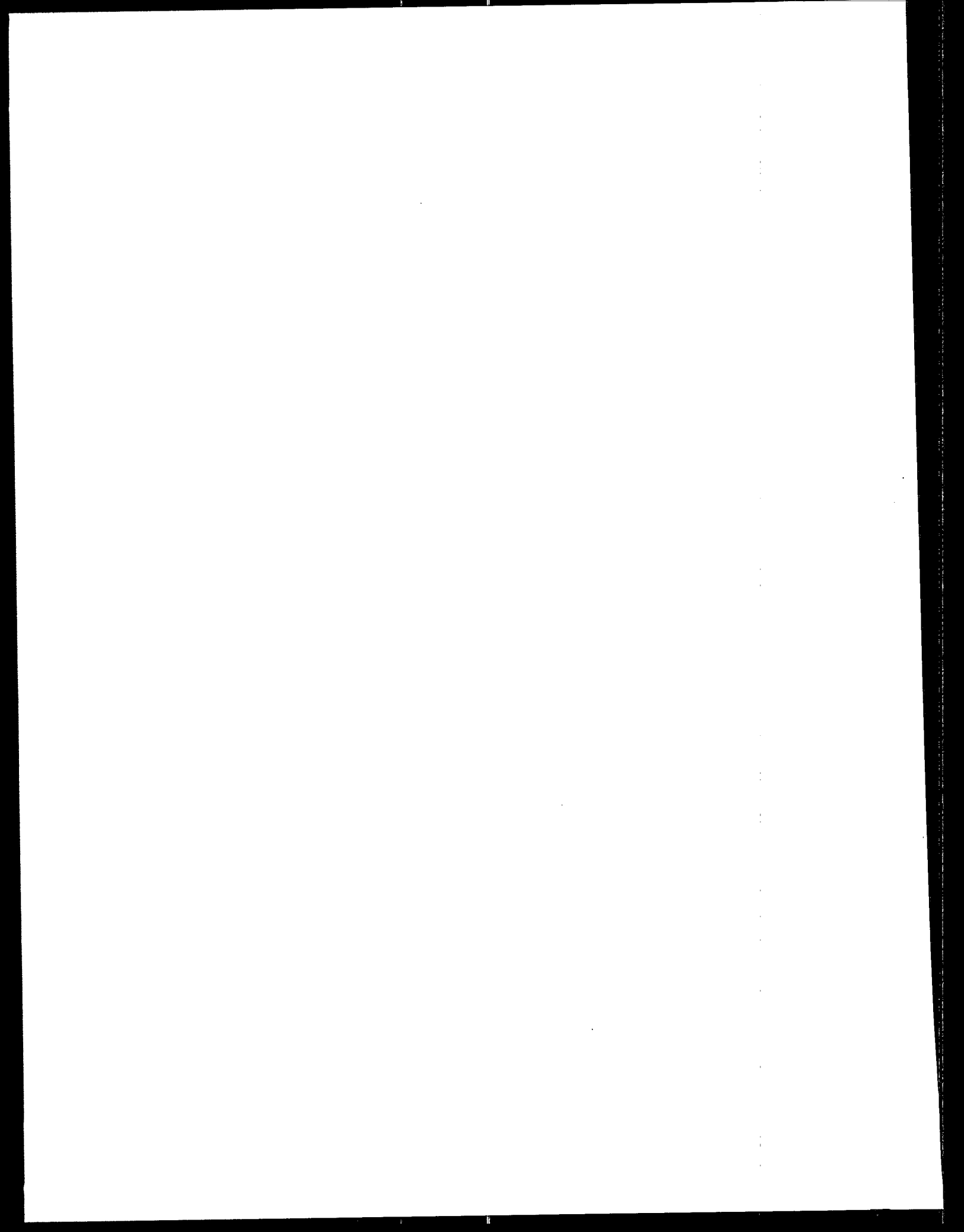


1,000s of gallons of wastewater treated

$$\frac{\$1,365,000 \times 0.521}{700,000 \text{ gallons}} = \$1.02$$

(WORKSHEET 11, LINE 33)



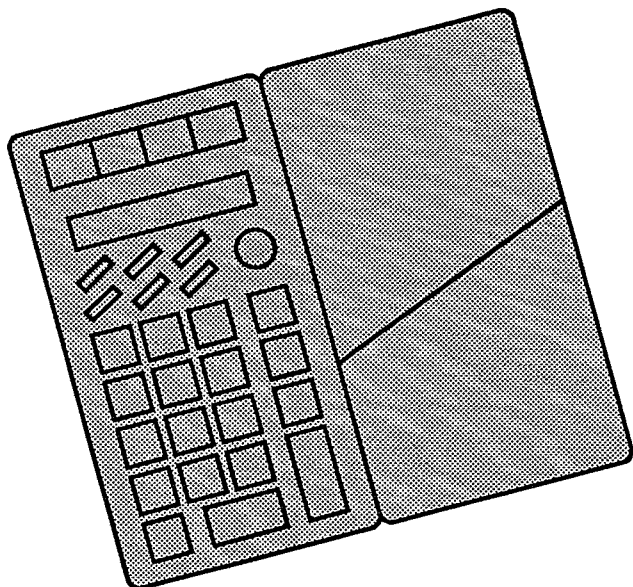


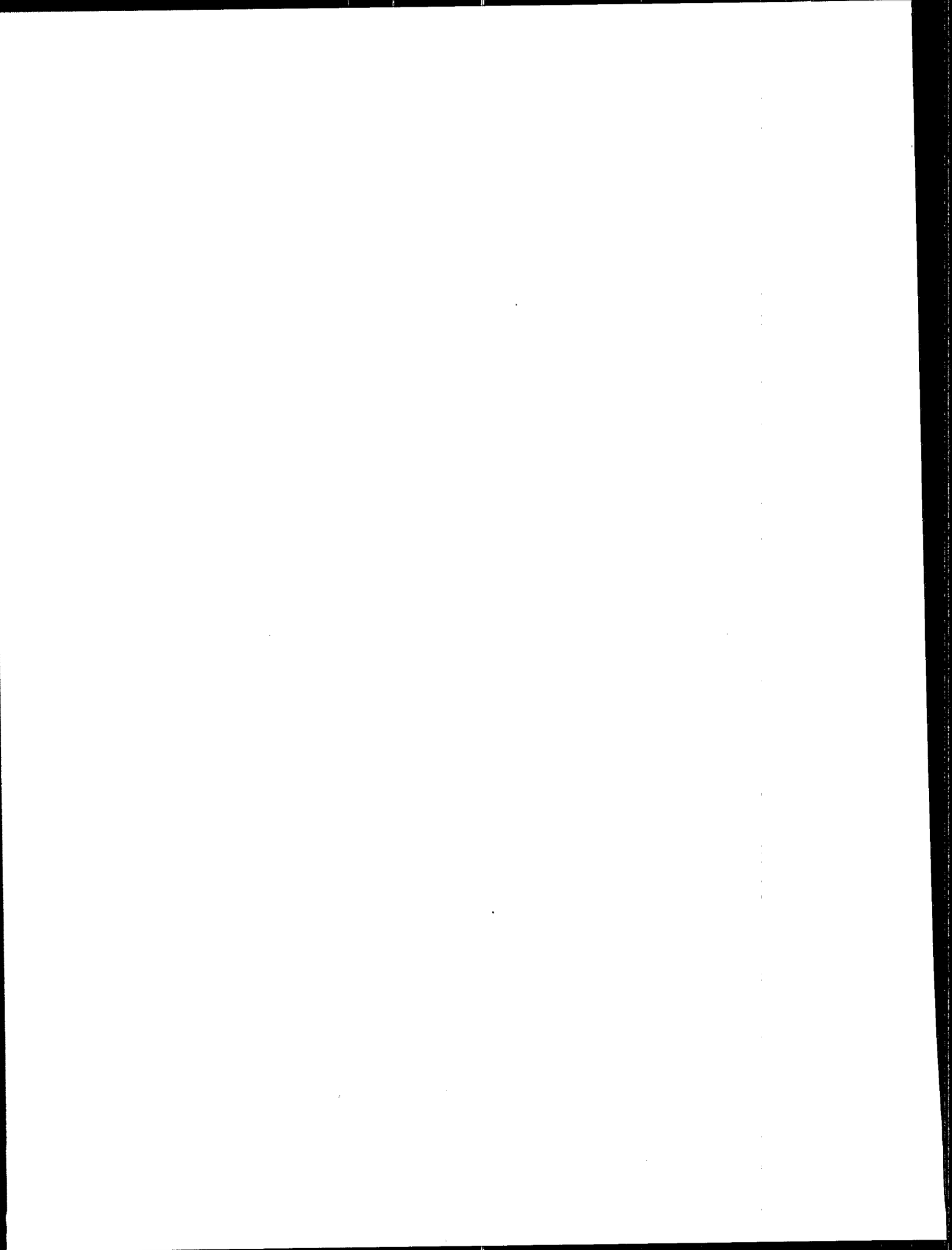
NEW USER SERVICE CHARGE RATE

$$\frac{\$1.02}{1,000 \text{ gals.}} \times \frac{700,000,000 \text{ gals.}}{500,000,000 \text{ gals.}} =$$

$$\frac{\$1.43}{1,000 \text{ gals}}$$

(WORKSHEET 11, LINE 33a)





Actual Industrial
Surcharge Rate/1,000 gals. $\frac{\quad}{\quad}$

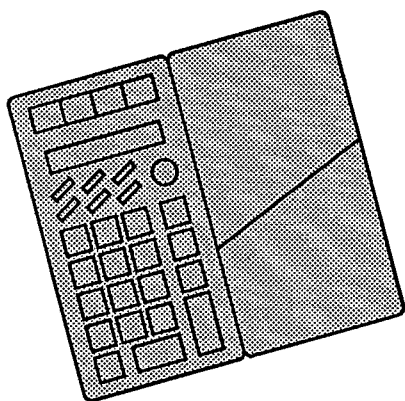
Net expenses \times portion attributable
to excess BOD or SS

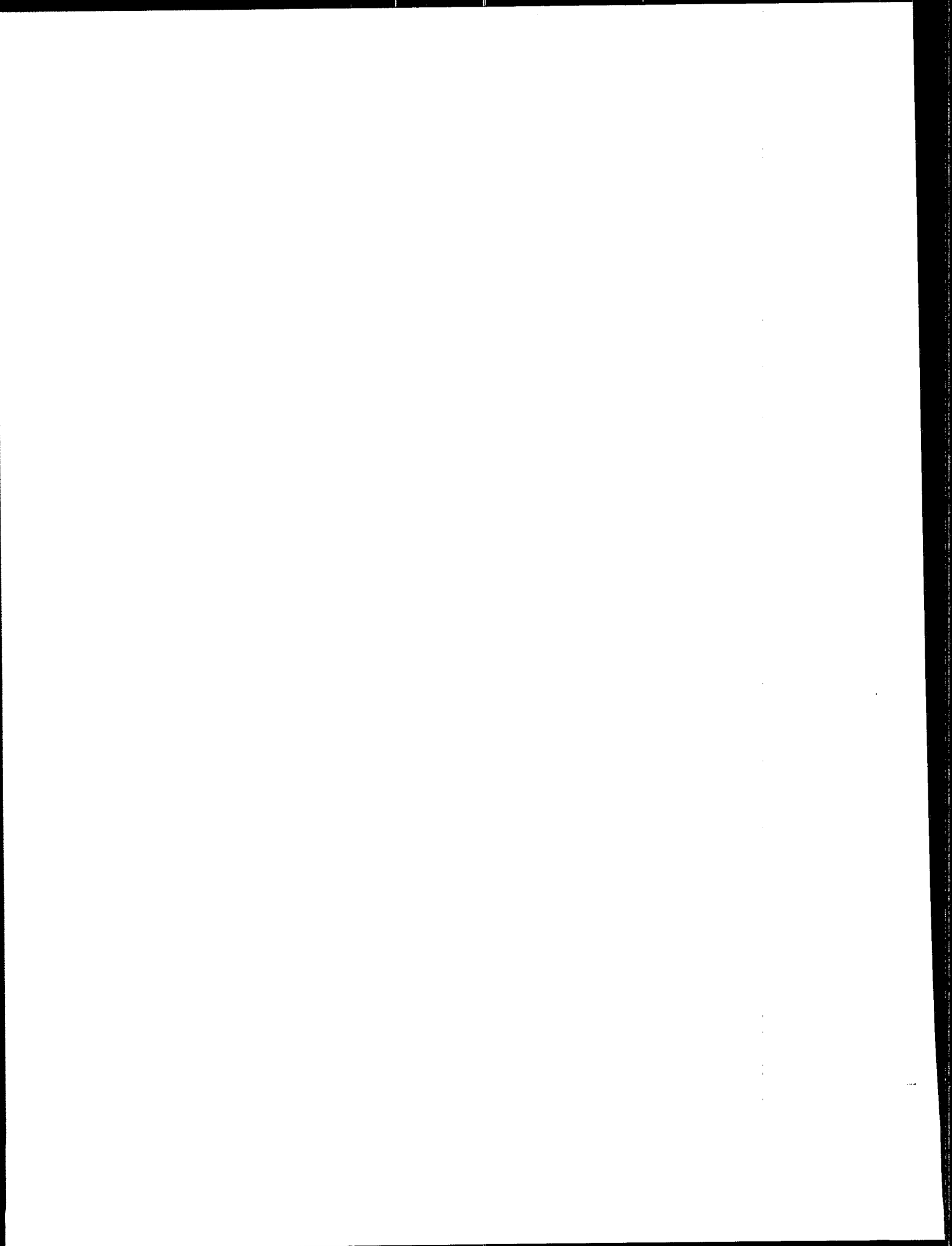
$\frac{\quad}{\quad}$

1,000s of gallons treated industrial wastewater

$$\frac{\$1,365,000 \times .479}{150,000 \text{ gallons}} = \$4.36/1,000 \text{ gallons}$$

(WORKSHEET 11, LINE 34)





NEW INDUSTRIAL WASTEWATER SURCHARGE RATE

$$\frac{\$4.36}{1,000 \text{ gals.}} \times \frac{700,000,000 \text{ gals.}}{500,000,000 \text{ gals.}} =$$

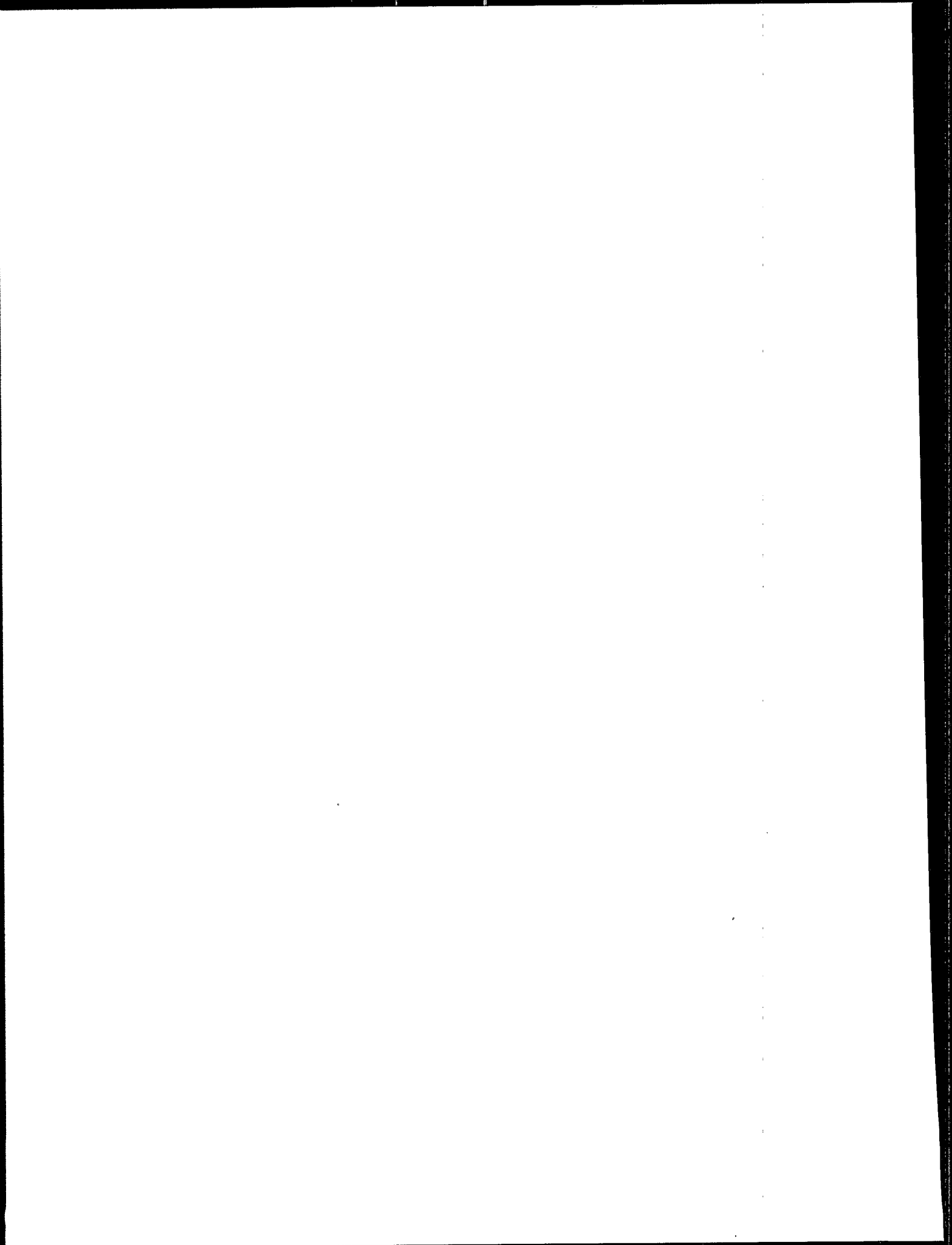
$$\frac{\$6.10}{1,000 \text{ gals.}} \quad (\text{WORKSHEET 11, LINE 34a})$$

TOTAL INDUSTRIAL USER SERVICE CHARGE RATE:

$$\begin{array}{r} \$1.43/1,000 \text{ gals.} \\ + \quad \$6.10/1,000 \text{ gals.} \\ \hline \end{array}$$

$$\$7.53/1,000 \text{ gals.}$$

(WORKSHEET 11, LINE 34b)



WORKSHEET 11

Portion of Treatment Costs Attributable to Normal Strength Wastewater [100 *divided by* (100 *plus* Item 30)]

0.521 31

Portion of Treatment Costs Attributable to Excess BOD or SS [Item 30 *divided by* (100 *plus* Item 30)]

0.479 32

Metered Water

Actual Wastewater Rate (per 1,000 gallons)
[(Item 28 *times* Item 31) *divided by* Item 29]

1.02 33

New User Service Charge Rate (per 1,000 gallons)
[Item 33 *times* (Item 4a *divided by* Item 4)]

1.43 33a

Actual Industrial Wastewater Surcharge Rate (per 1,000 gallons)
[(Item 28 *times* Item 32) *divided by* (Item 3 *divided by* 1,000)]

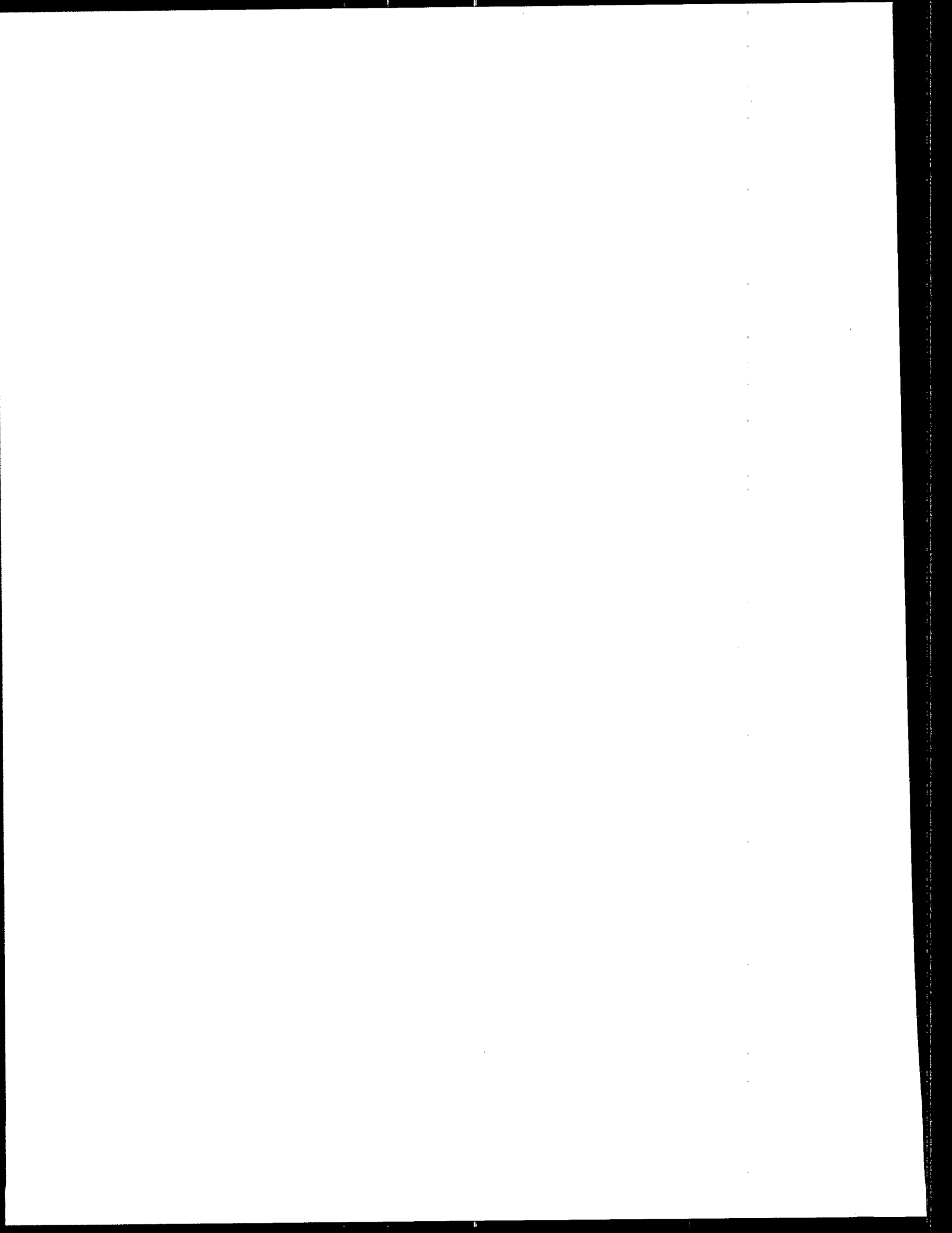
4.36 34

New Industrial Wastewater Surcharge Rate (per 1,000 gallons)
[Item 34 *times* (Item 4a *divided by* Item 4)]

6.10 34a

Total New Industrial User Service Charge Rate
(per 1,000 gallons) [Item 33a *plus* Item 34a]

7.53 34b



WORKSHEET 12

Unmetered Water

New User Service Charge Rate (per 1,000 gallons)
[(Item 28 *times* Item 31) *divided by* Item 29]

_____ 35

Residential, per month
[Item 35 *times* (7.8 thousand gallons/month)]

_____ 35a

Apartments, 1-2 bedroom, per month
[Item 35a *times* 0.75]

_____ 35b

Apartments, 3+ bedrooms, per month
[Item 35a *times* 1.00]

_____ 35c

Commercial/Institutional, per month
[Item 35a *times* 2.50]

_____ 35d

Restaurants/Taverns, per month
[Item 35a *times* 10.00]

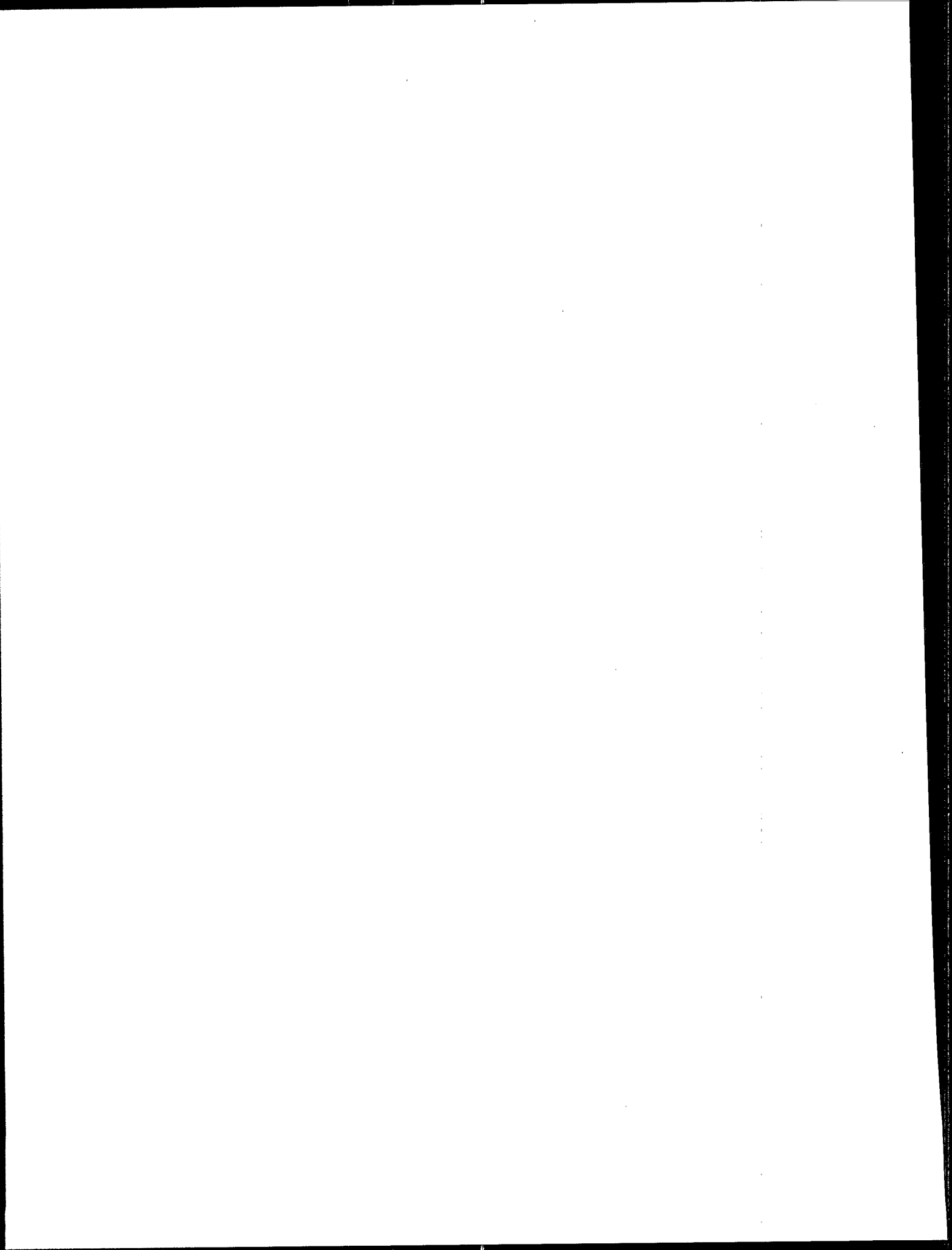
_____ 35e

New Industrial Wastewater Surcharge Rate (per 1,000 gallons)
[(Item 28 *times* Item 32) *divided by* (Item 11a *divided by* 1,000)]

_____ 36

Total New Industrial User Service Charge Rate
(per 1,000 gallons) [Item 35 *plus* Item 36]

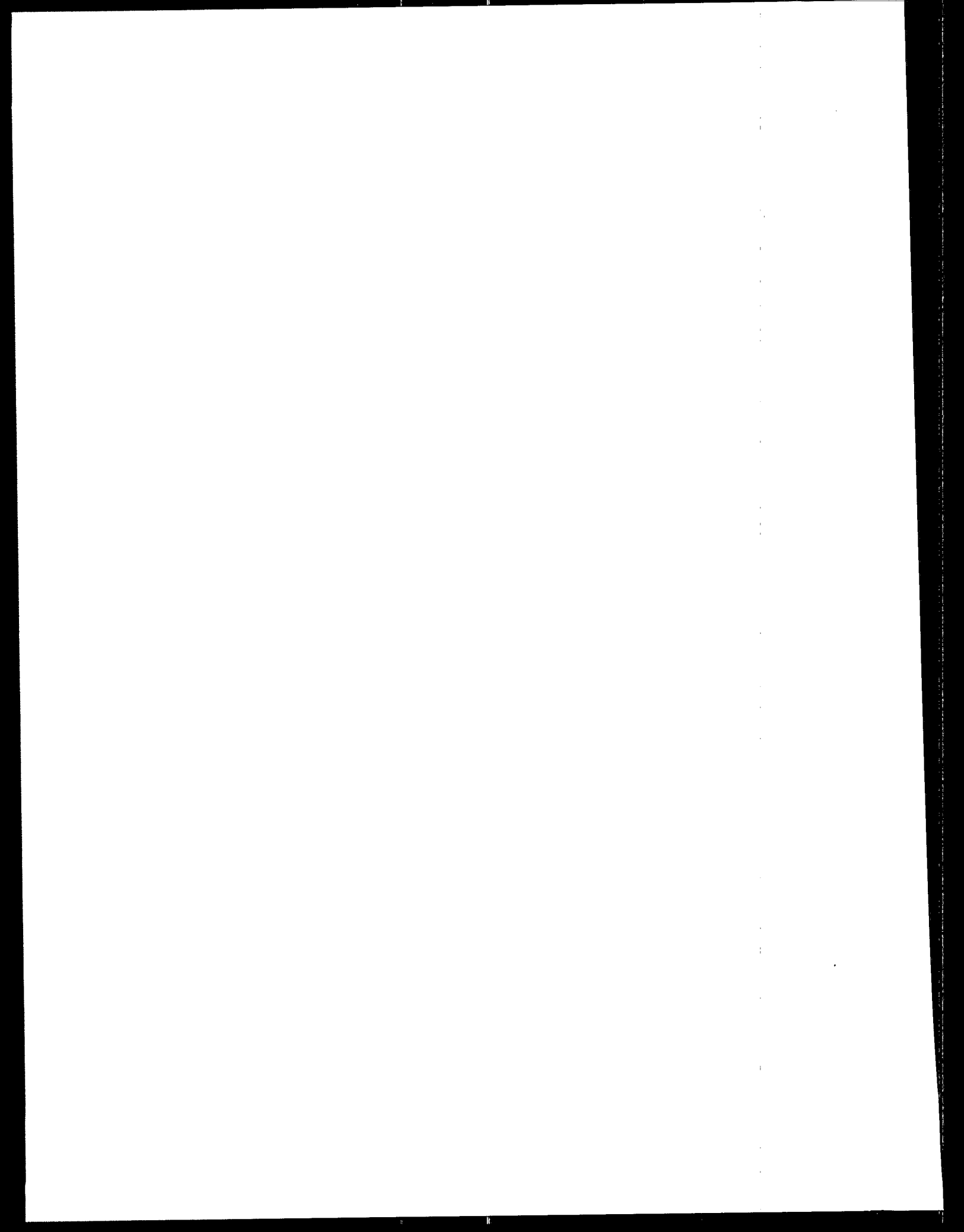
_____ 36a



VI. SELLING A USER CHARGE INCREASE TO CUSTOMERS

- A. A GOOD PUBLIC EDUCATION PROGRAM IS THE KEY TO SUCCESS**
- B. HOW DO YOU CONDUCT A PUBLIC EDUCATION CAMPAIGN?**
- C. ONCE YOU'VE INCREASED USER CHARGES, HOW DO YOU KEEP ON TRACK?**

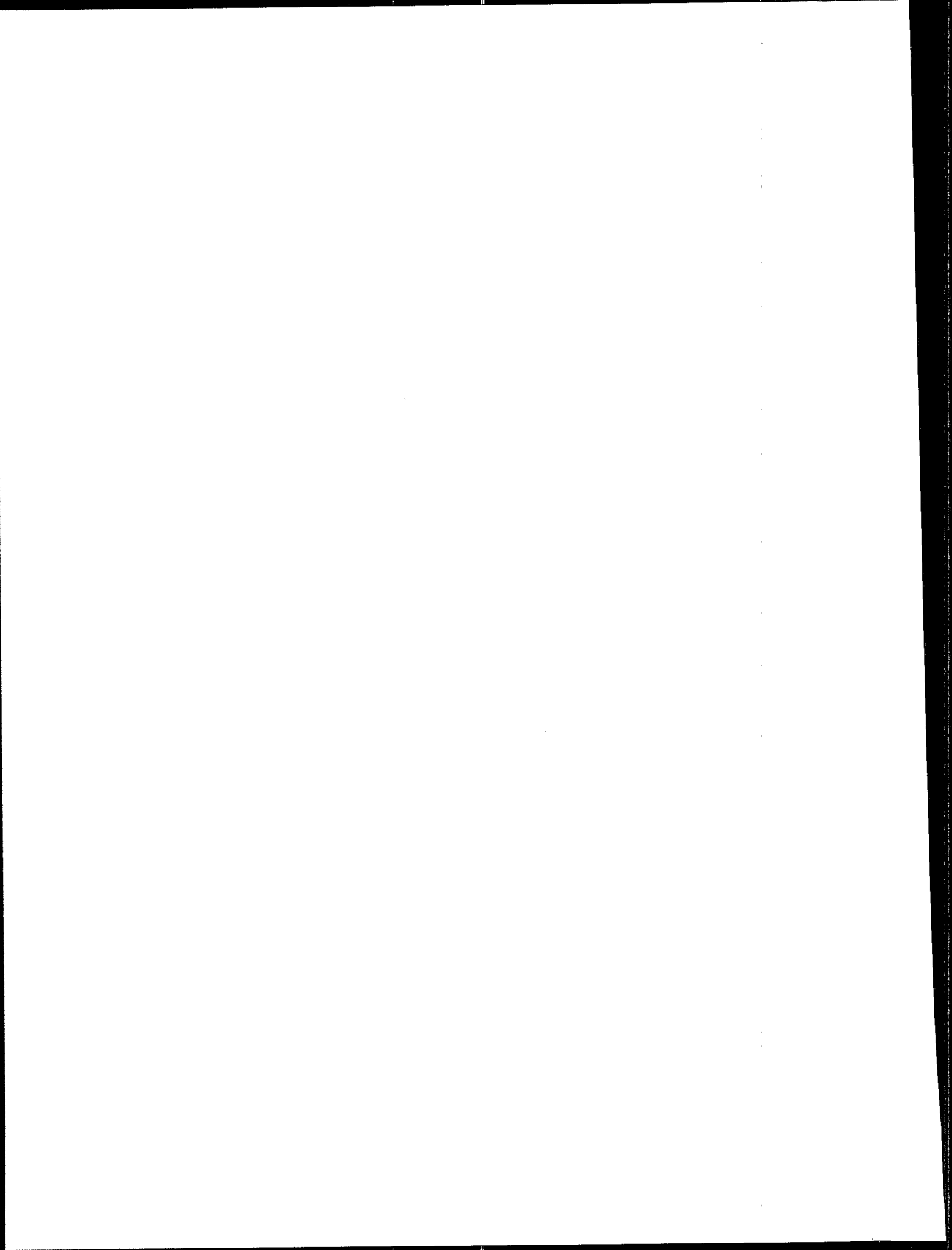
Tell the topics that will be covered in this session



A. A GOOD PUBLIC EDUCATION PROGRAM IS THE KEY TO SUCCESS

*** Many Water and Wastewater Operations Are Facing Very Serious Financial Problems**

- *Use Overhead # 67*
- *As we've already discussed many water and wastewater operations are facing very serious financial problems. And, financial problems lead - sooner or later - to water quality and enforcement problems.*
- *State and federal pressures to meet and maintain water quality standards will continue and translate into higher costs.*
- *It goes without saying that inflation will continue to increase operational costs.*
- *And now grants are gone.*
- *Additional revenue will be needed sooner or later. The rate of increase may be slowed by improving efficiency through the better management practices that we've discussed today - such as better purchasing procedures, better utilization of manpower, improved collections, money management and so forth.*
- *Experience shows that if operations are short-changed --- such as holding off on repair/replacement of a malfunctioning pump --- it usually costs more in the long run. And again, you stand the risk of having facilities deteriorate to the point that effluent limits are violated.*

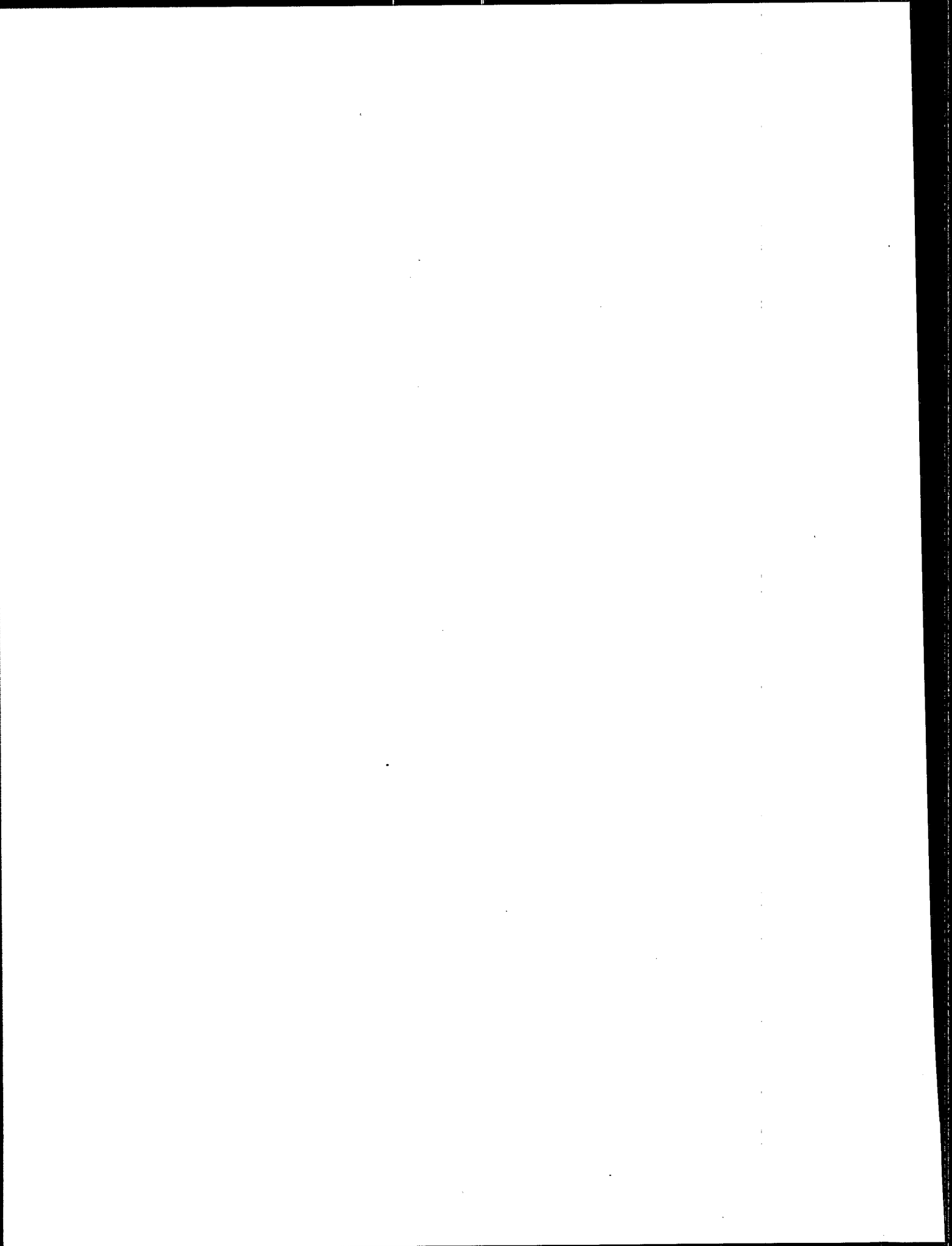


*** Improving Overall Financial Management is a Way Out of Those Problems**

- *The star of the good financial management tool kit is adequate user service charges.*
- *They are the best source of revenue.*
- *Wastewater treatment operations should be financially self-sufficient - just like any other utility operation.*
- *This probably equates to increasing user charges. And that action is one most feared by local officials.*

*** Increasing User Service Charges Can Equate to Political Suicide**
Just Ask West Carolina Regional Sewer Authority in Greenville, S.C.

- *Some lessons have to be learned the hard way.*
- *Greenville S.C.'s West Carolina Regional Sewer Authority instituted a 30% rate increase which met with major opposition. One year later the same authority implemented a 56% increase successfully. What made the difference? Stay tuned.*
- *Do you know of instances where increasing rates have spelled political defeat for local government officials?*

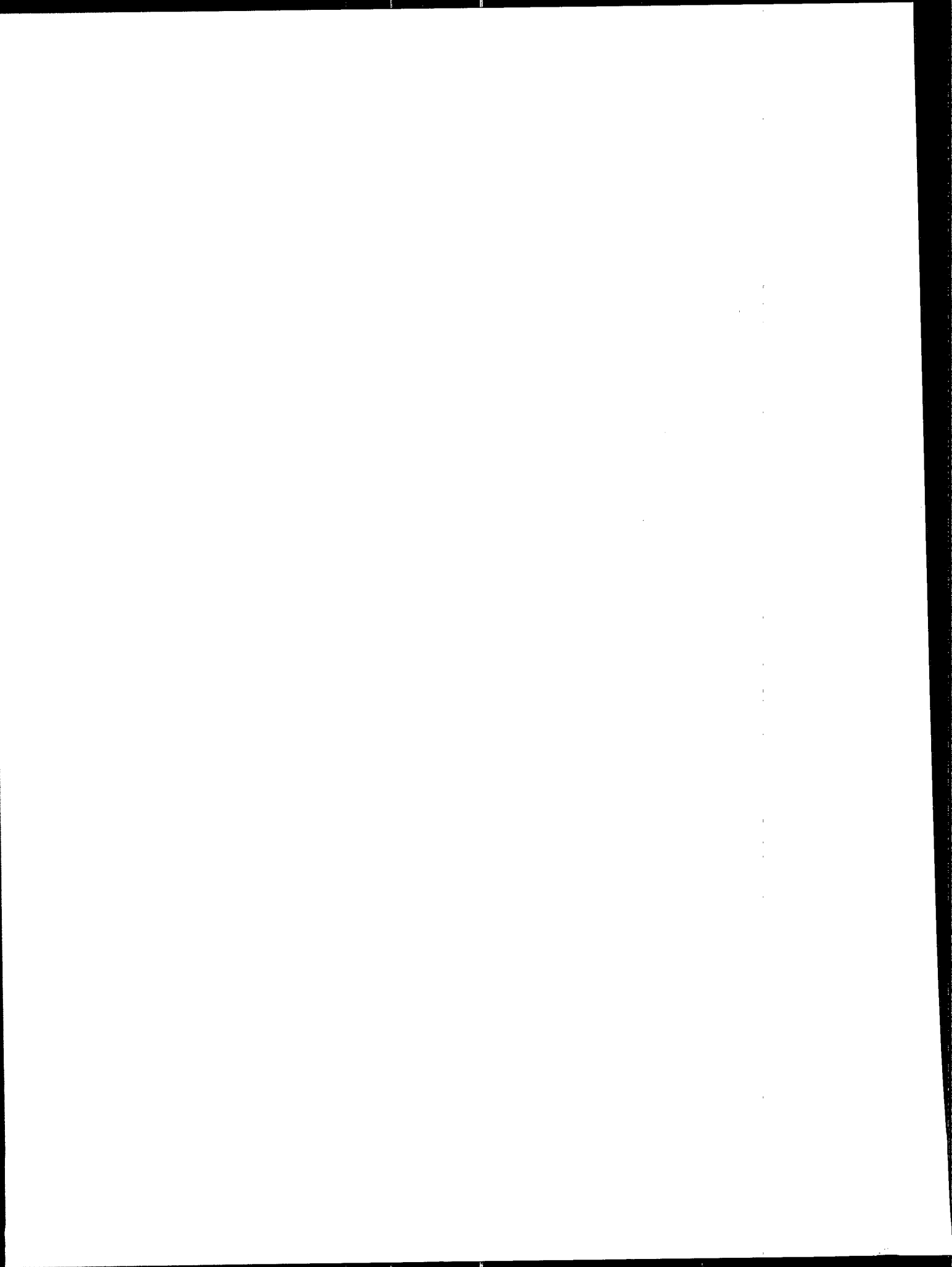


* **Or Local Government Officials Can Raise Rates and Live to Tell About It**

- *Kokomo Knows ----- How to Do It*
- *Raising rates doesn't have to be disastrous.*
- *Kokomo, Indiana had several problems to correct in its sewerage system - major line rehabilitation, odor problems and repair needs.*
- *They paid for these projects - 17 in all - with a bond issue backed by a 45% rate increase.*
- *The rate increase met with little opposition. Why?*

* **The Difference Between Suicide and Success is PUBLIC EDUCATION!**

- *Use Overhead # 68*
- *Kokomo implemented a public education program well in advance of the rate increase.*
- *Milwaukee has successfully increased its user charges over the past 10-15 years to finance \$1.7 billion in water pollution control efforts. They used an effective, ongoing public education program.*
- *How can you tell whether your public education is successful? Two tests are:*
 - (1) *Little or no public opposition*
 - (2) *Higher user charges are not an election issue*



B. HOW DO YOU CONDUCT A PUBLIC EDUCATION CAMPAIGN?

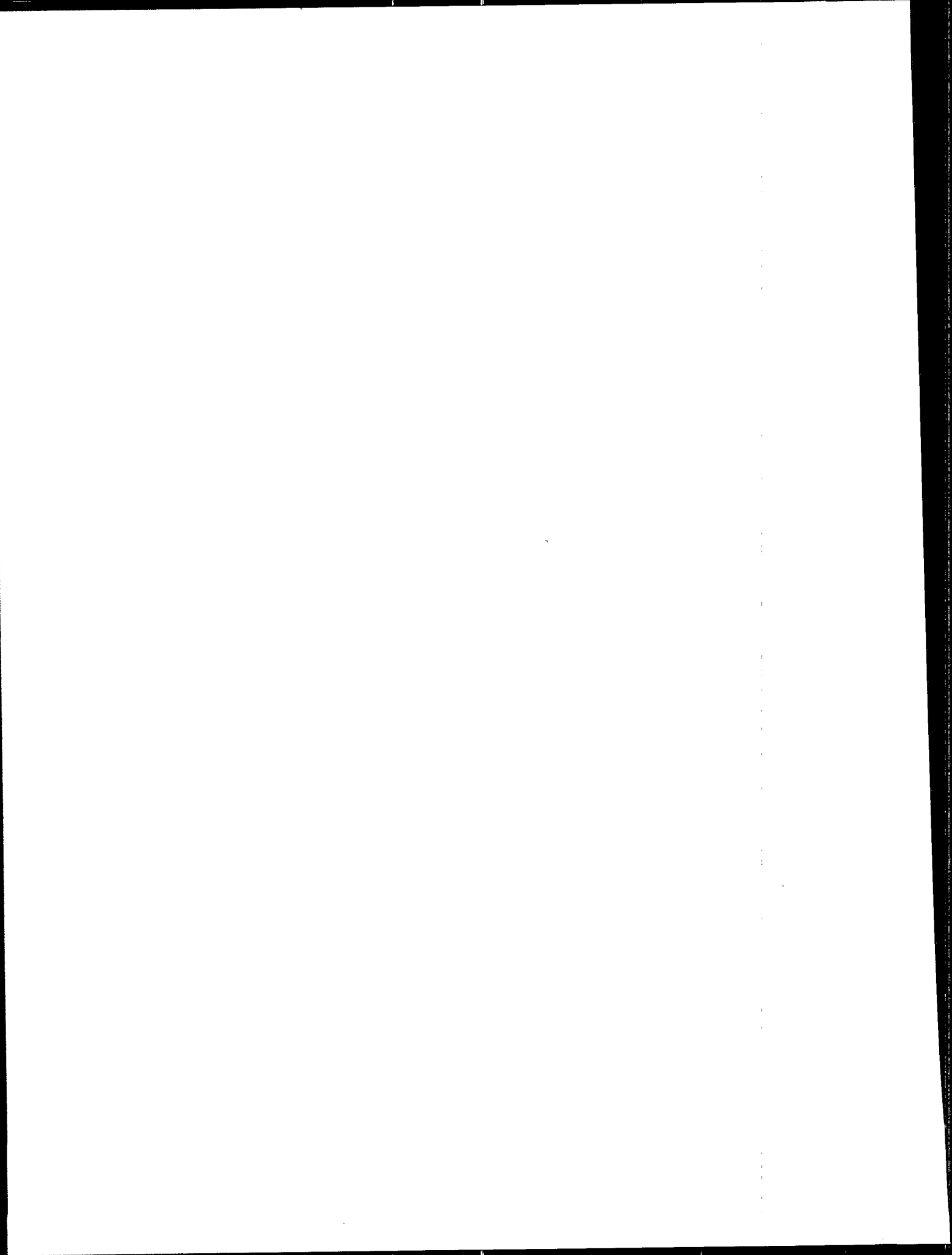
* Plan Ahead

Think Through What You've Been Doing and Why

- *Successful public education programs do not just happen. Like anything worthwhile - they require time and effort.*
- *Start early and think through your operation. What's right with it and what needs improvement.*
- *Use Overhead # 69*
- *Ask yourself - Are we really managing well here? Is management top-heavy? Can operating costs be cut? Do we let past due accounts slide? You may need an outside expert to help evaluate your operation.*
- *What have you run across in your experience that could save the utility money? These are some things I have found*

Decide on Other Steps to Take

- *Initiate water conservation practices.*
- *Shape the workers into a leaner, team-oriented group.*



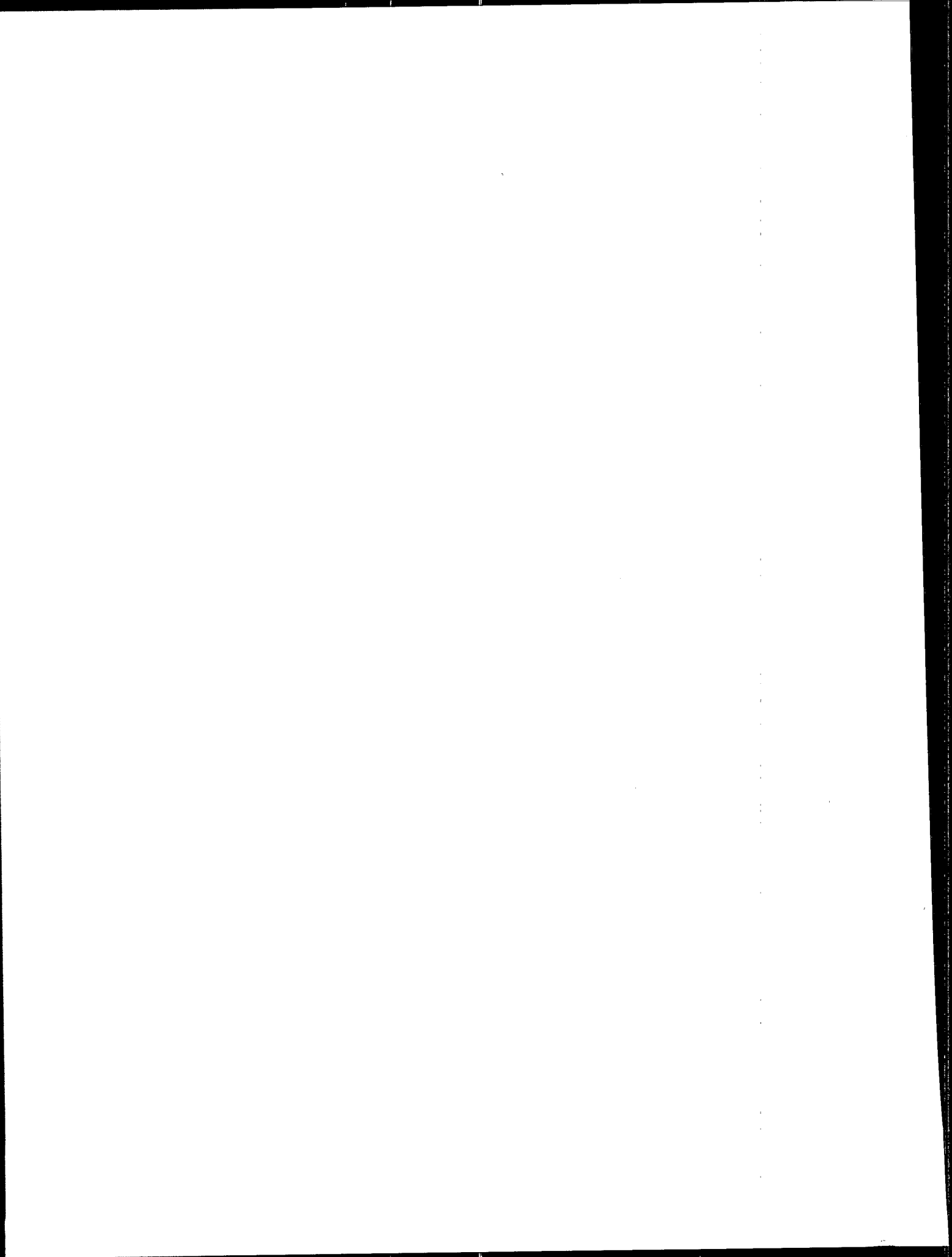
- *Improve purchasing procedures. Do what you can to reduce/delay the inevitable - a rate increase.*
- *But, don't put it off too long!*
- *Worn-out pumps and lines will not get better with time. They get worse!*

*** Get Ready to Meet the Public**

- *Take photos of facilities, equipment and people. These visuals will help later.*
- *Document the improvements you have made.*
- *Document the remaining needs.*

*** Budget for the Public Education Program**

- *Use Overhead # 70*
- *The size of the budget will depend on the objectives.*
- *Milwaukee Metropolitan Sewerage District spent over \$700,000 during four years to build public trust for the district's pollution abatement program. This bought: a 32 ft. traveling education vehicle, a citizen newsletter, newspaper advertisements and TV time.*



- *But, much can be accomplished with less. Twin Falls, Idaho spent \$2,000 on a one day Clean Water Day event, newspaper advertisements and a poster contest for school children. They also sponsored plant tours and educational demonstrations.*

Staff

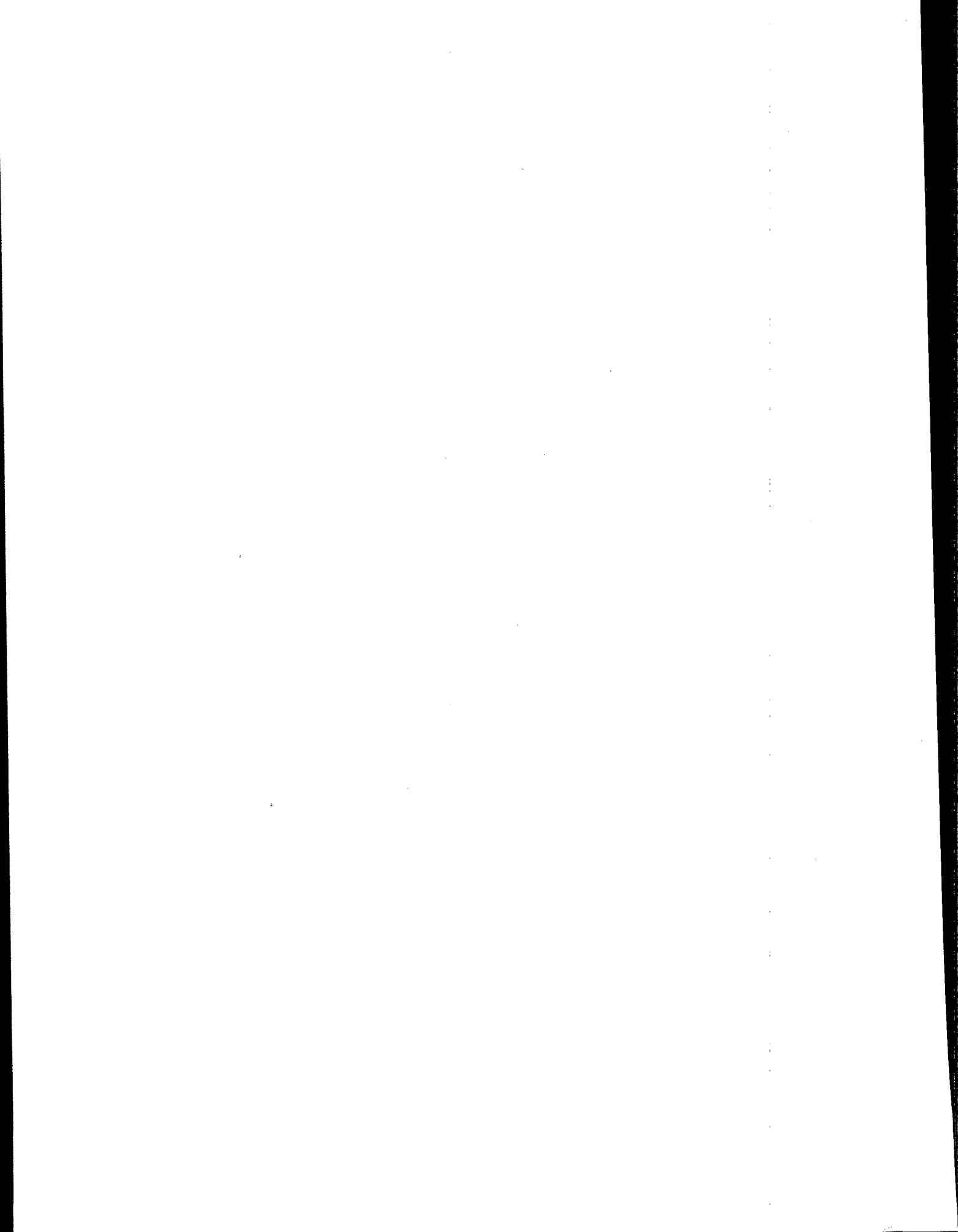
- *You may use existing staff who take on additional duties to put together the educational program; or, you may hire someone for these responsibilities or use outside consultants.*
- *Outside experts, such as public relations firms with experience in environmental matters can be a great help.*
- *But, remember to keep existing staff deeply involved. They know the system and its problems.*

Materials and Services

- *Budget for brochures, posters, slides, videos, advertisements and other promotional items.*

Overhead

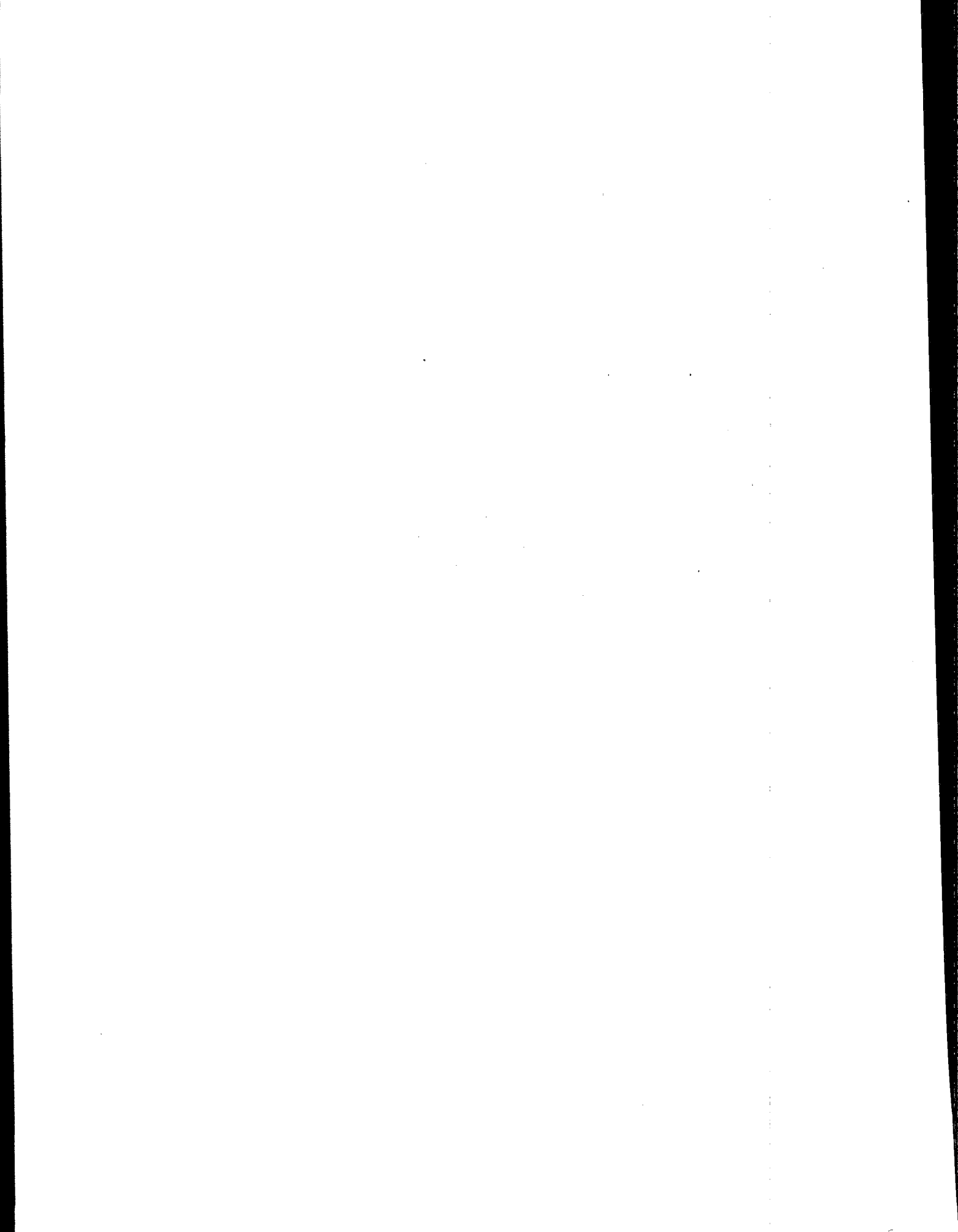
- *Don't forget about budgeting for postage, office space, and supplies. If your public education program is small, these may be absorbed into the existing operating budget.*



* **Shape the Message**

What Do you Want To Say?

- *Use Overhead # 71*
- *Establish the value. People are willing to pay a fair price for something they value. Tell users what they are getting for their money.*
- *Describe and emphasize the benefits. Had any recent construction or major repairs? Show them! Highlight activities which increased efficiency.*
- *Give cost comparisons. How does the wastewater user charge compare with the cost of cable TV? the cost of basic phone service?*
- *Link community growth and economic development to wastewater treatment services. Did your town attract a new industry because adequate sewerage services were available?*
- *Emphasize increased property values. Having sewer service is an asset. Just ask someone who has to rely on a failing septic tank/drainfield system.*
- *Discuss public health benefits of eliminating water borne diseases and providing a clean environment.*
- *Think through the objectives -- increase revenue to issue bonds, to construct new facilities, to establish public trust and support. Different objectives will require different approaches. Will this be an on-going program?*
- *Money and snazzy graphics aren't enough. Your message is what will convince your audience. Be honest and straightforward!*



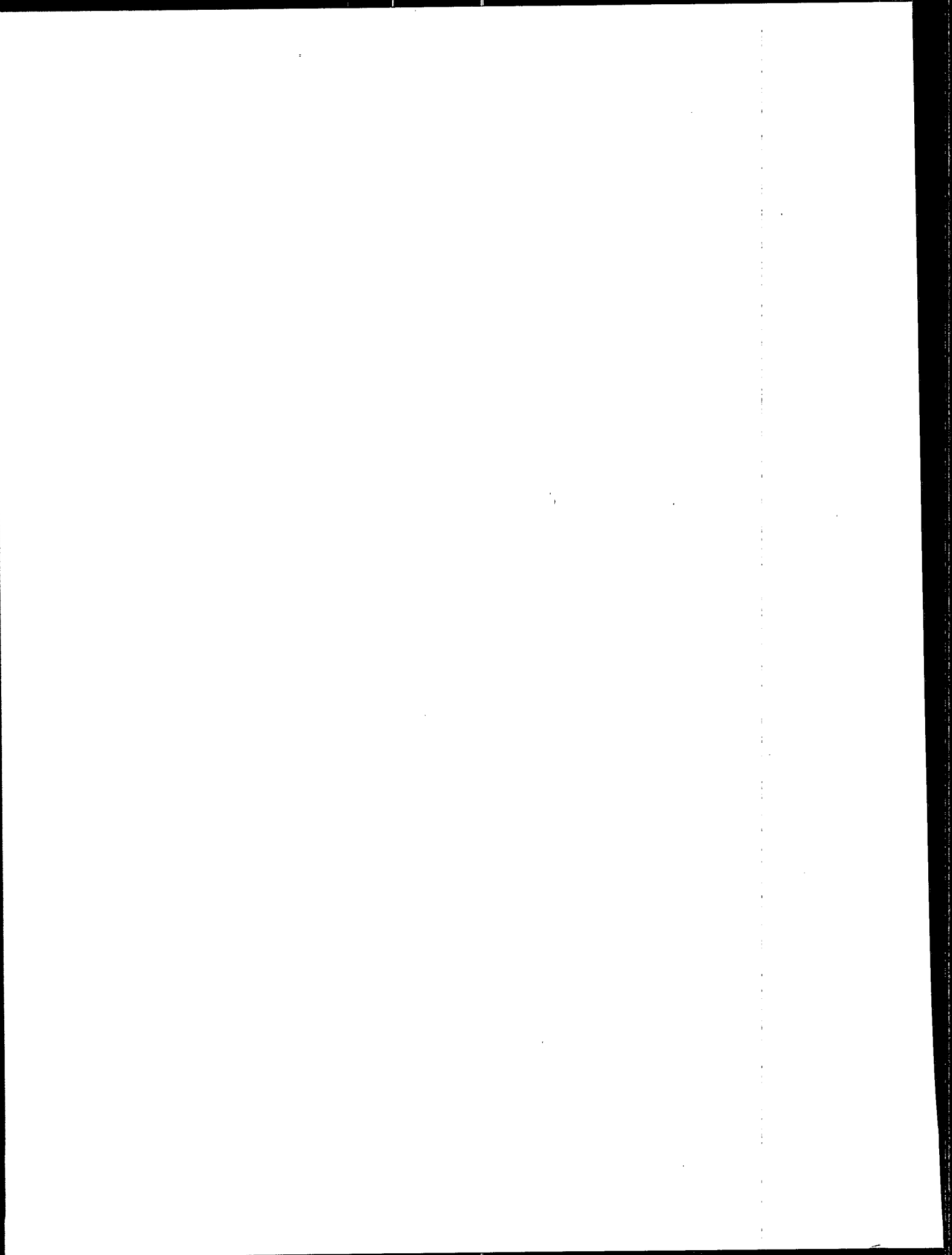
* **What Methods Will be Used?**

- *How can you best convey the message? Will meetings do it? Plant tours for certain groups? Technical reports? Newspaper advertising? TV?*
- *Think about methods, objectives, budget, the spokesperson and time frame considerations.*

* **Choose Spokesperson(s)**

Who Are

- **Organized**
 - **Enthusiastic**
 - **Great Communicators**
 - **Natural Leaders**
 - **Familiar with the Subject**
-
- *Use Overhead # 72*
 - *Who's the messenger? You need a primary spokesperson - an insider - to take the lead. The public will trust a messenger they know. The spokesperson should be enthusiastic, familiar with the subject, a good communicator, and able to lead and shape opinions into consensus.*
 - *Back up the primary messenger with technical experts, communications specialists and city personnel.*
 - *Engineering consultants, especially those with marketing experience can help.*

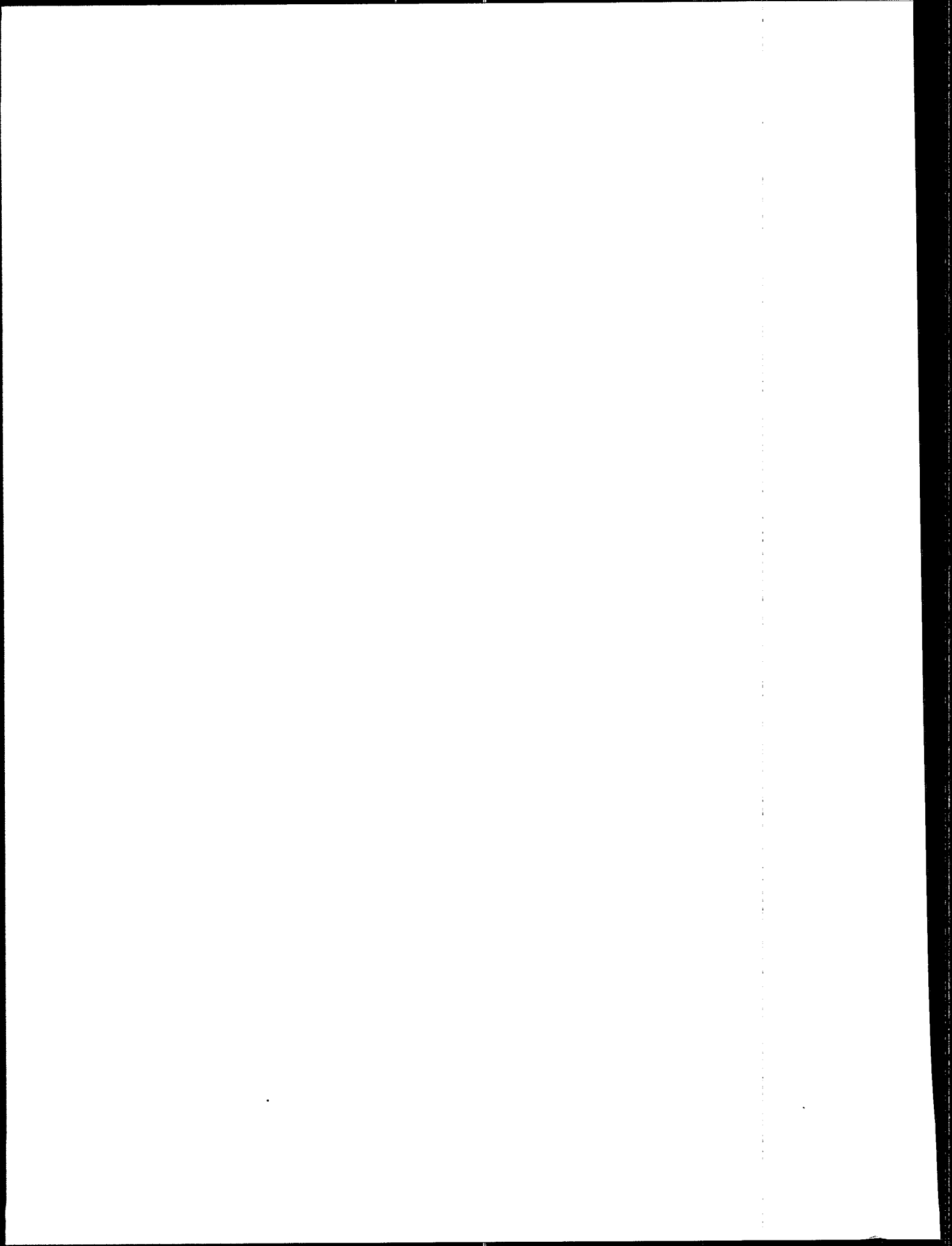


- *Seek out consultants who specialize in advertising and public relations.*
- *College students majoring in journalism at a nearby college may be able to help.*

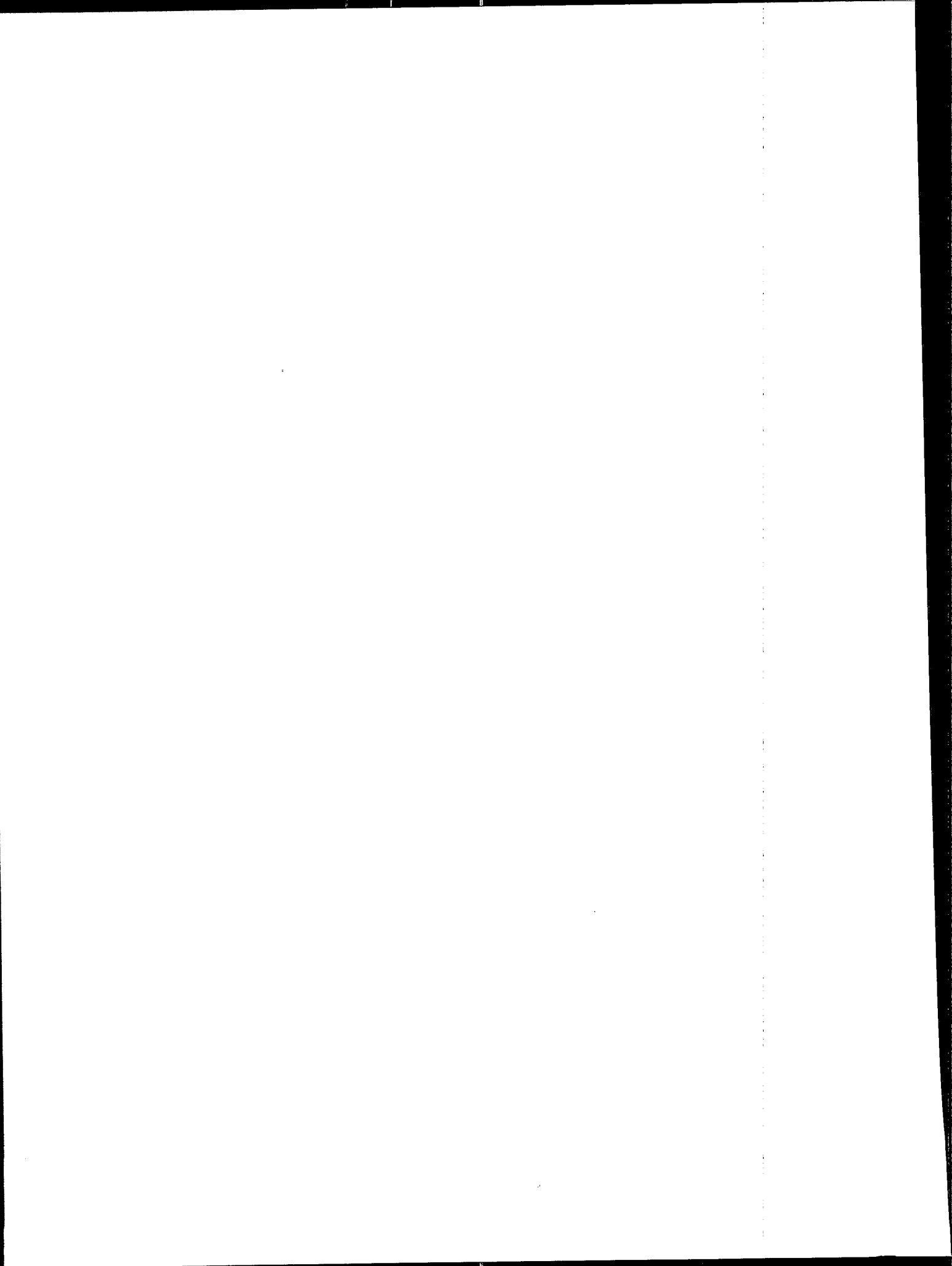
*** Get the Message Out**

Target Audiences

- **Start with the Workplace**
 - **Local Government Officials**
 - **Community Groups**
 - **Media**
 - **Youth**
 - **General Public**
-
- *Use Overhead # 73*
 - *Start the message in the work place. Turn your staff into a public relations team. What they say in casual comments can create a positive or a negative image of the utility operation. Educate employees in answering questions and complaints.*



- *Target audiences and identify what information they will need.*
- *Target local government officials, business and civic leaders. Public officials need detailed information for decision-making. Use graphs to simplify complex information. Take them on tours of the system. Show them your success stories. Business and civic leaders will want to know how services (or lack of them) will affect the community's business and economic health.*
- *Target the media. Work with them! They can help you tremendously. The media are the eyes and ears of the public. You'll get radio, TV and newspaper coverage. Make sure it's the kind of coverage you want!*
- *Reporters are interested in how issues affect the public, particularly "quality of life" issues. Educate them about wastewater treatment. Treatment is complicated. Your challenge is to explain complex processes, problems and proposed solutions in easy-to-understand terms.*
- *Communicate with the media through news releases, fact sheets, telephone calls and plenty of one-on-one contact.*
- *Target youth. Youth will be future rate payers and they have enormous influence on the current rate payers - their parents. Youth are eager to learn. Sponsor a water science fair, give wastewater plant tours or sponsor a poster contest.*



- *Target the general public. How do you reach the people who do not belong to a civic group, read a newspaper or have children? Use a newsletter with the monthly bill, use a telephone opinion survey or use displays at libraries and shopping malls.*
- *Repeat the message several times in a variety of ways.*
- *Remember, your public education campaign should be an on-going activity. Intensity can be varied as needed.*

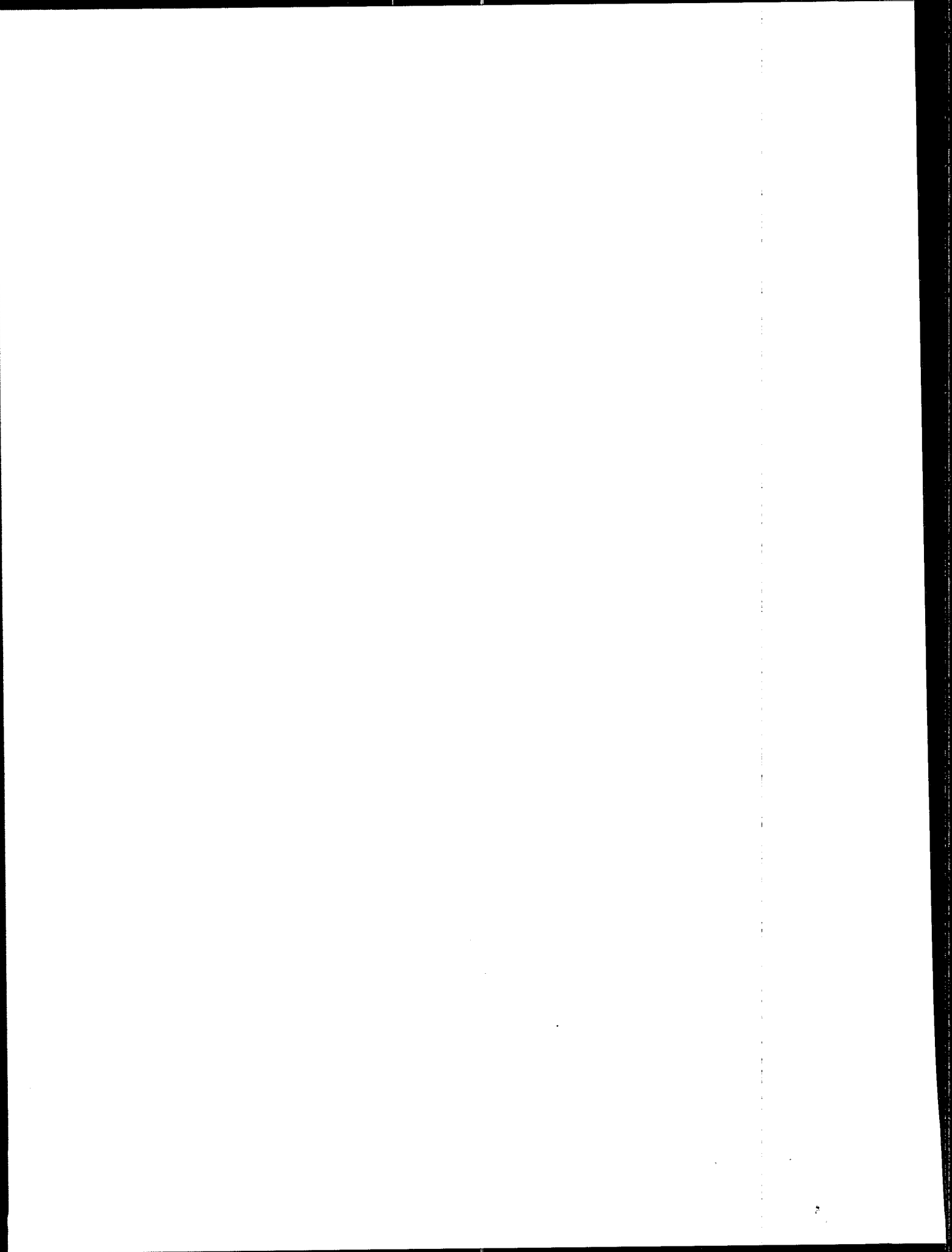
*** Evaluate and Document**

- *Evaluate your public education program so you can improve next time. Ask: Did we accomplish our objectives? Did we gain public support?*
- *Use an opinion poll.*
- *Keep track of complaint calls. Track media reports to help in your evaluation.*
- *Keep files so you won't have to start from scratch next time your system needs a rate increase.*

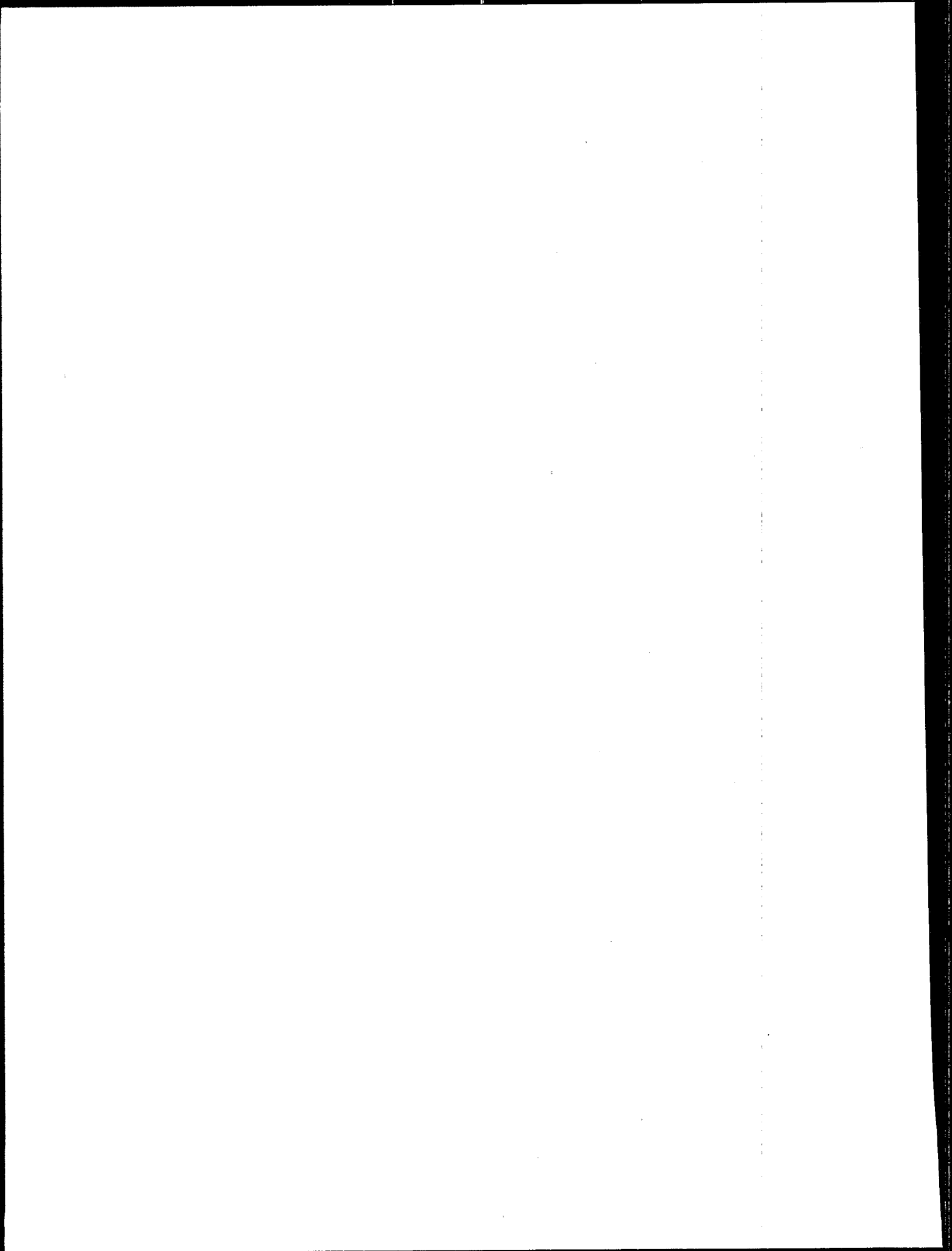
C. ONCE YOU'VE INCREASED USER CHARGES, HOW DO YOU KEEP ON TRACK?

- * **Make Small Annual Adjustments**
- * **Move the Utility Operations Out of the Political Realm**
- * **Use Monthly Billing**
- * **Bill Separately for Water, Wastewater, Trash Disposal, Etc.**
- * **Continue PUBLIC EDUCATION**

- *How can you assure adequate future revenues? An EPA study provides these suggestions:*
- *Overhead # 74*
- *Make small annual adjustments. Prices for other goods and services are adjusted to cover inflation, why not sewer service?*
- *Move the utility operations out of the political realm. Put water and wastewater operations under an authority separate from the political body. They will still need to use public education to sell rate increases.*
- *Use monthly billing. This allows customers to budget more effectively. Its easier to pay a small monthly charge than a large quarterly one.*
- *Separate charges for water, sewer, trash disposal and so forth. Charges should be based on costs so the customer knows the value of each service. One utility operation should not supplement another.*

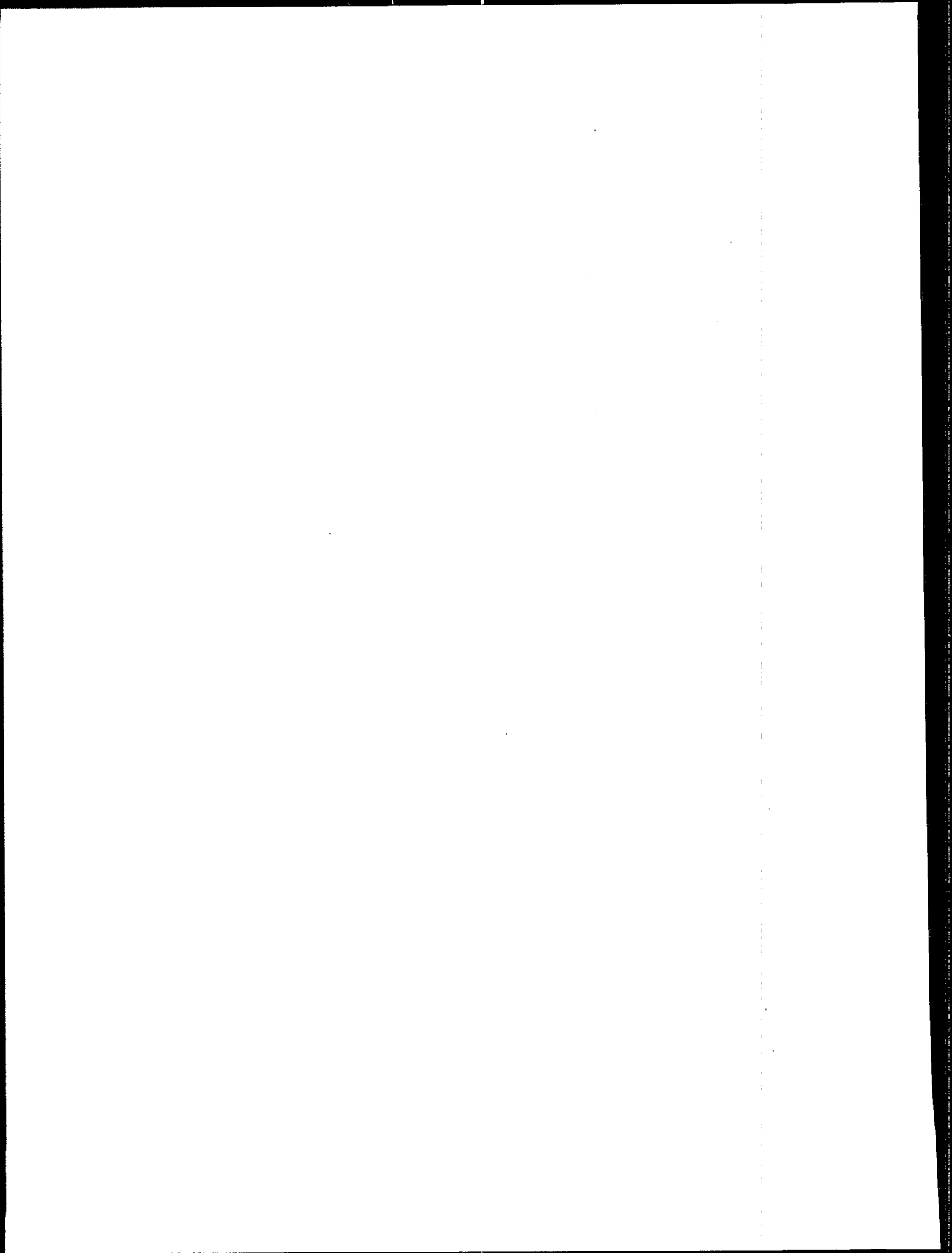


- *All these techniques are only supplements to a good ongoing public education program.*
- *In summary, wastewater costs are going to increase. There's no way to avoid this fact.*
- *User charges are the best method for achieving financial self-sufficiency.*
- *User charges can be successfully increased by developing a comprehensive, ongoing public education campaign.*
- *When you get the utility on track, take steps to keep it there and use your public education program as needed.*
- *Let's review this topic with a video. (Play the video on "Building Support for Increasing User Fees").*



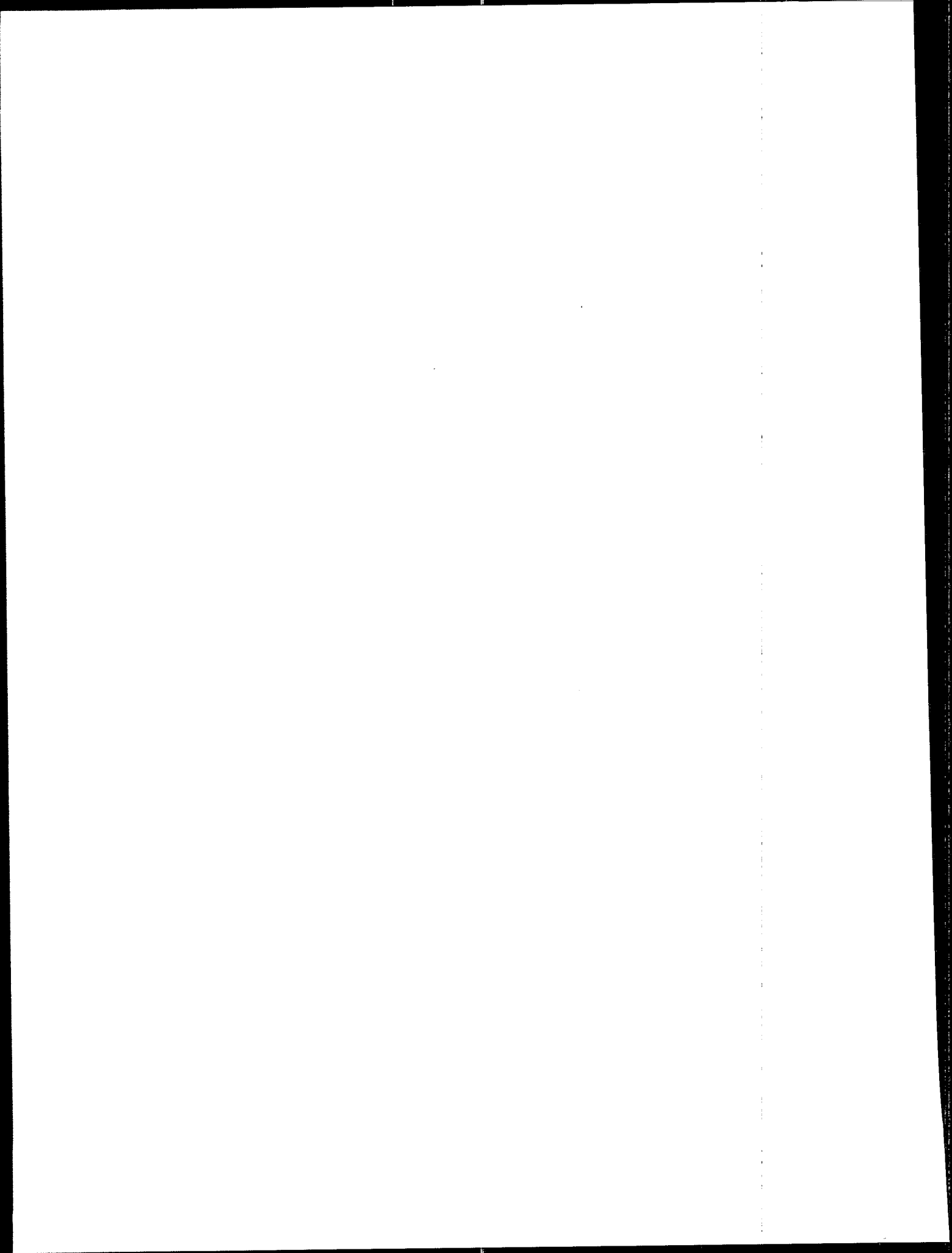
SERIOUS PROBLEM

- **HIGHER COSTS**
- **MORE REVENUE**
- **USER CHARGES**
- **PUBLIC EDUCATION**



INCREASE REVENUES

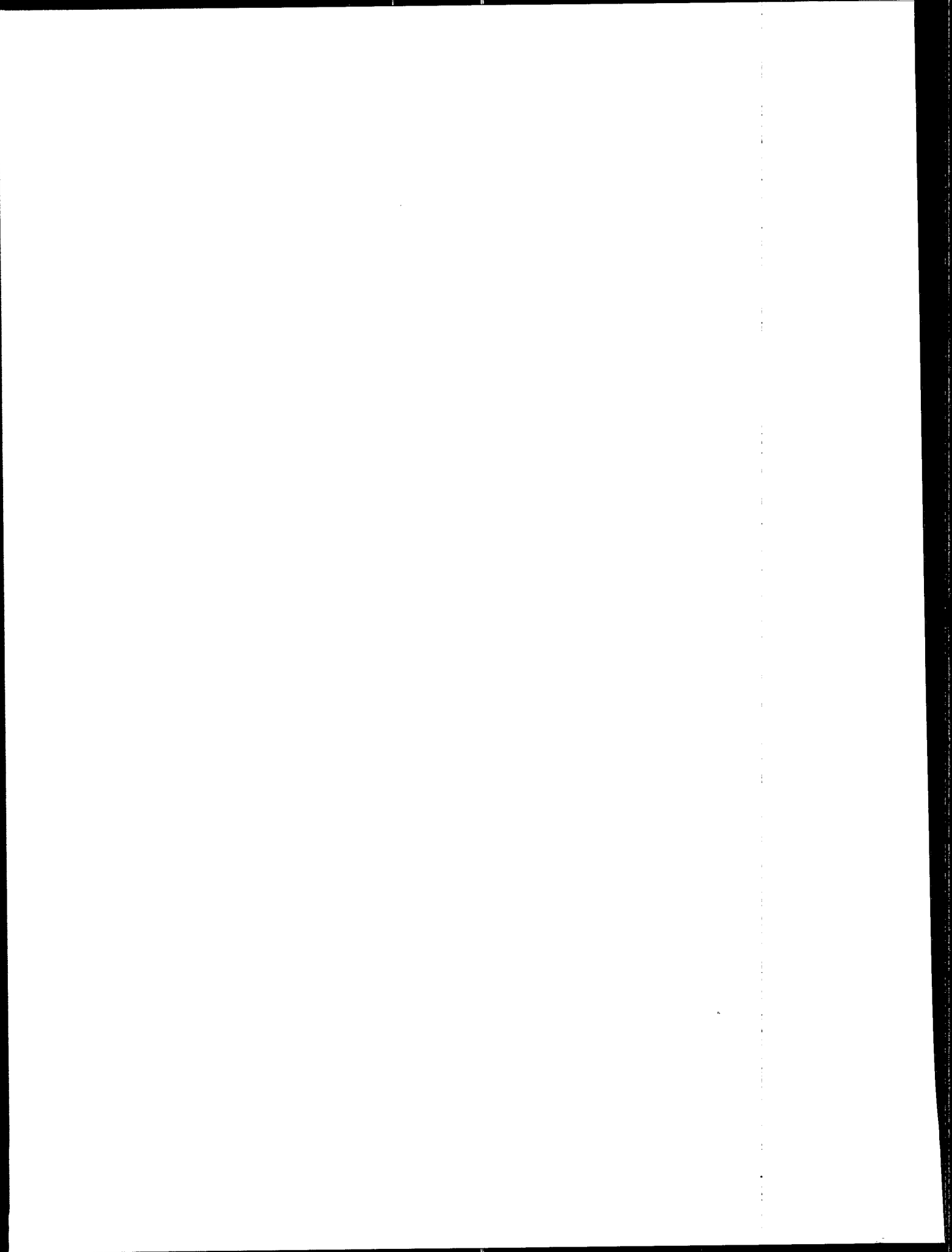
- **USER CHARGES**
- **PUBLIC EDUCATION**



**HOW DO I
CONDUCT A PUBLIC EDUCATION
CAMPAIGN?**

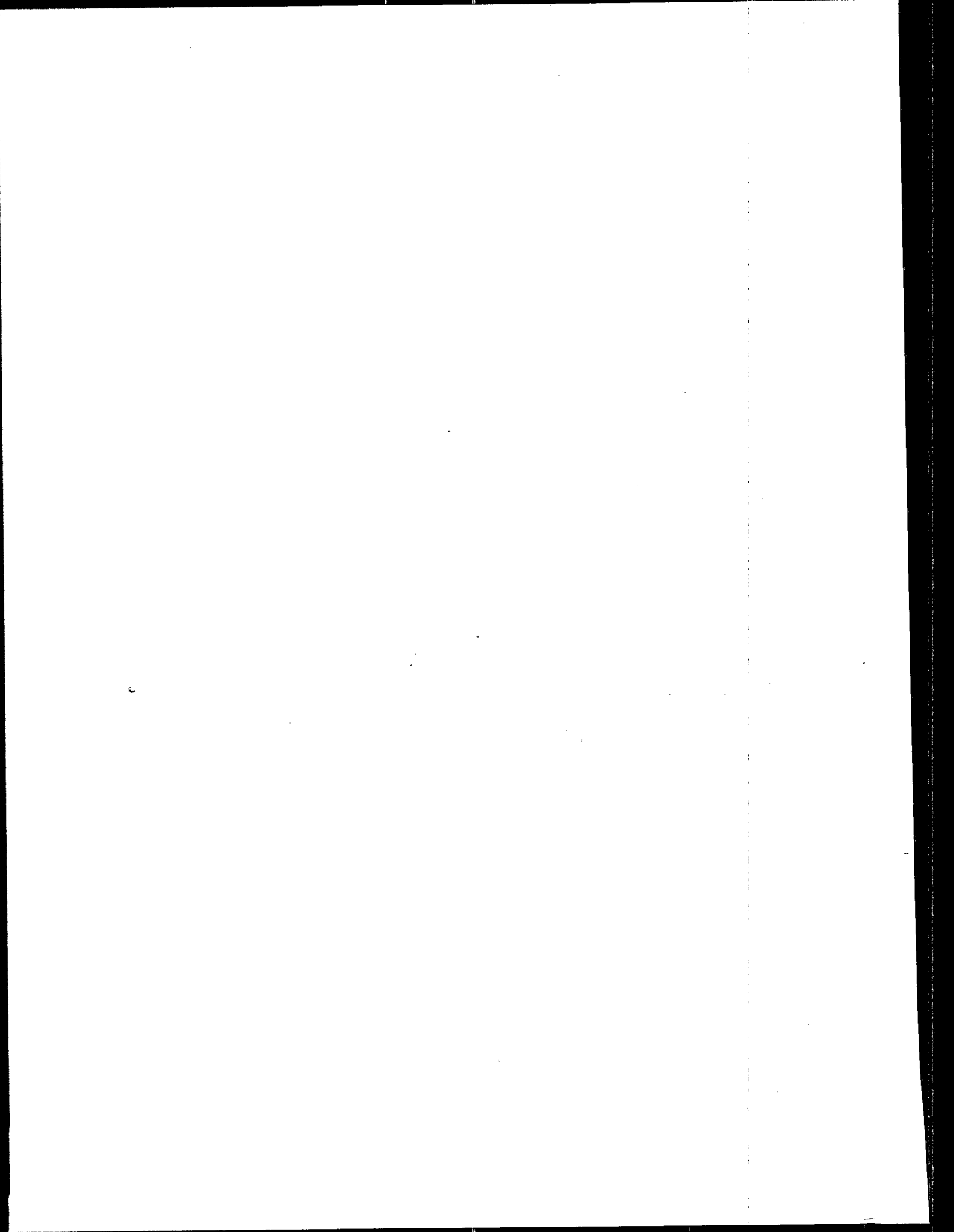


- **PLAN AHEAD**
- **DECIDE ON ACTION STEPS**
- **IMPLEMENT THE PLAN**



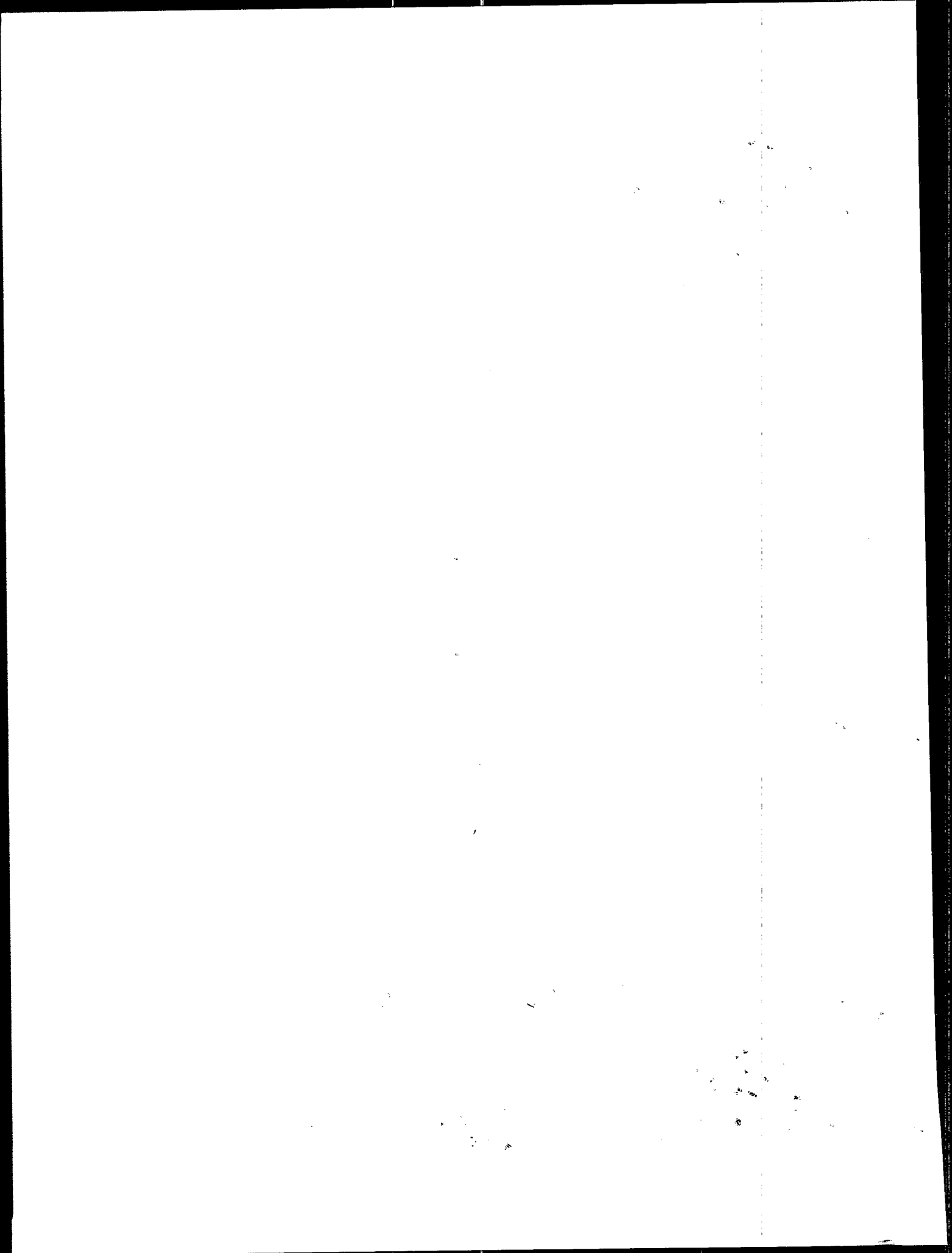
PROGRAM ACTIVITIES

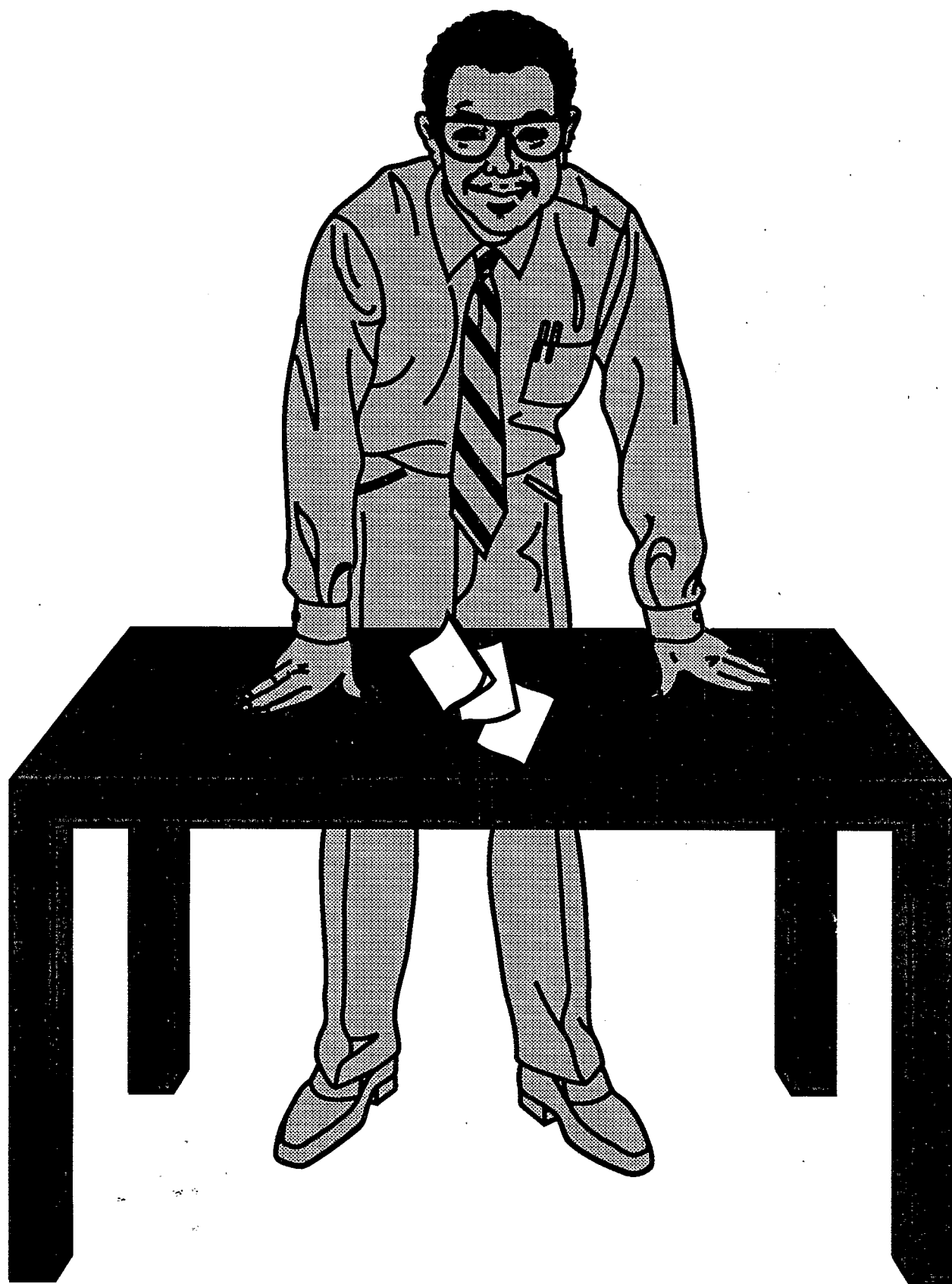
- **OBJECTIVES**
- **BUDGET**
- **MESSAGE - REPEAT**
- **ASSESS - ONGOING**

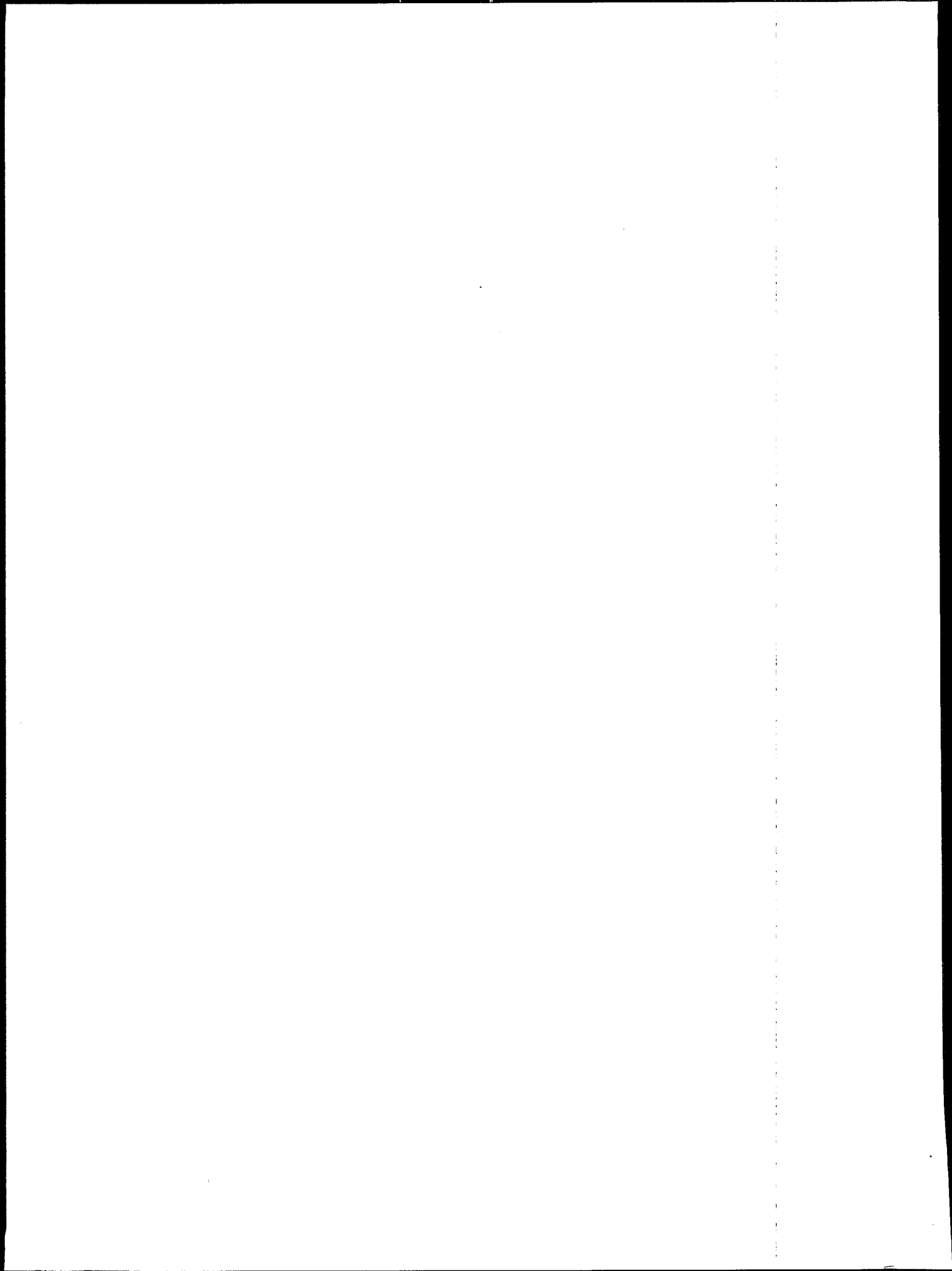




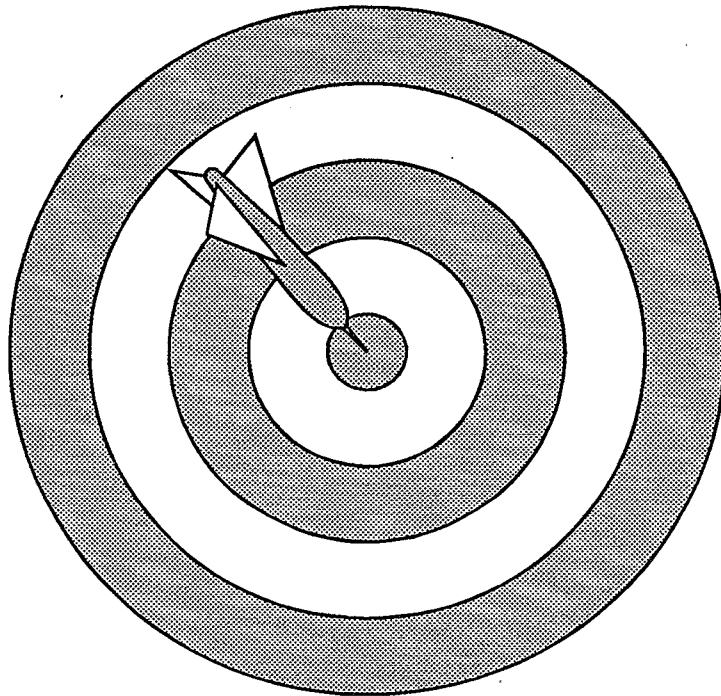
- ESTABLISH ***VALUE***
- DESCRIBE ***BENEFITS***
- GIVE ***COMPARISONS***
- EMPHASIZE ***PUBLIC HEALTH***





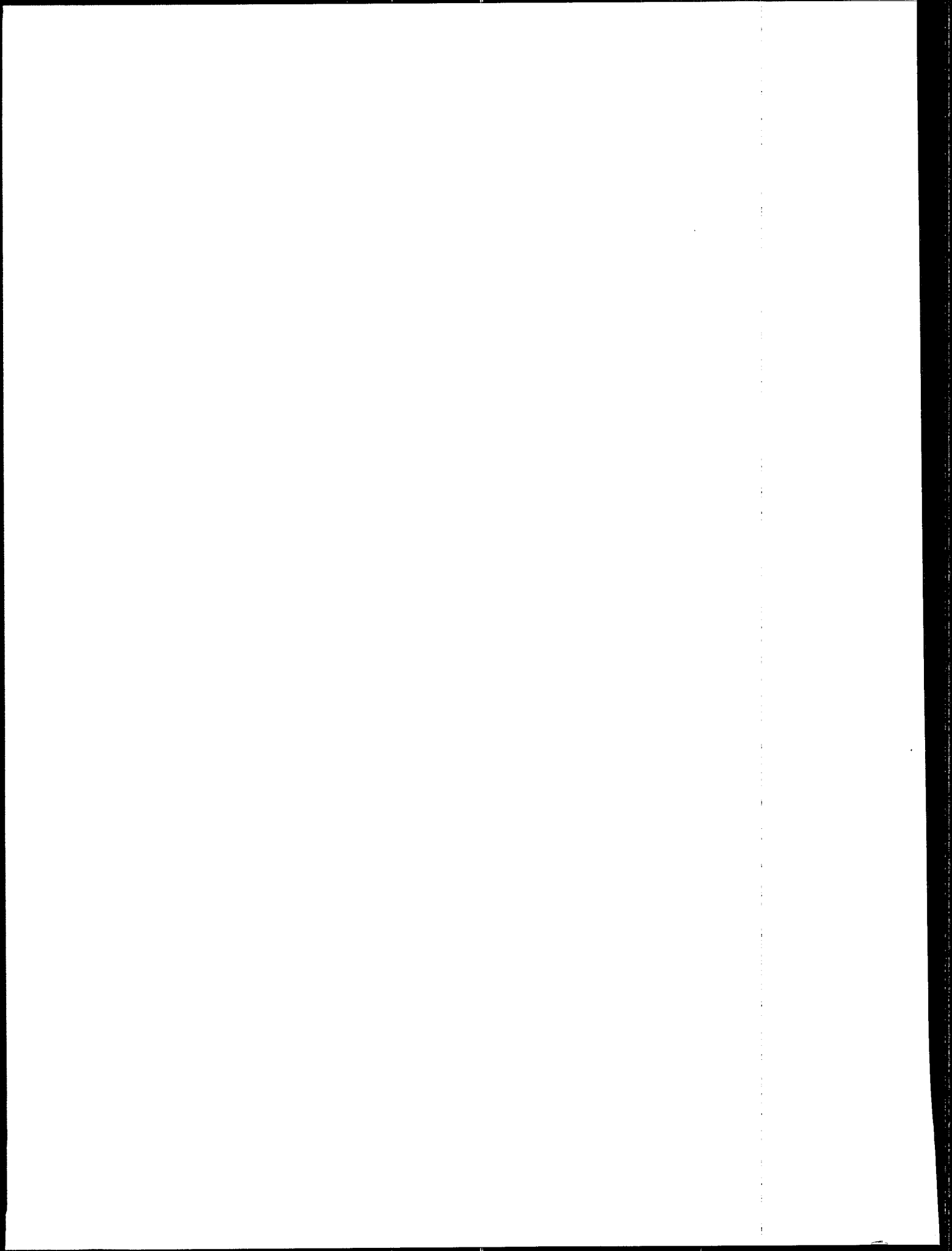


TARGET



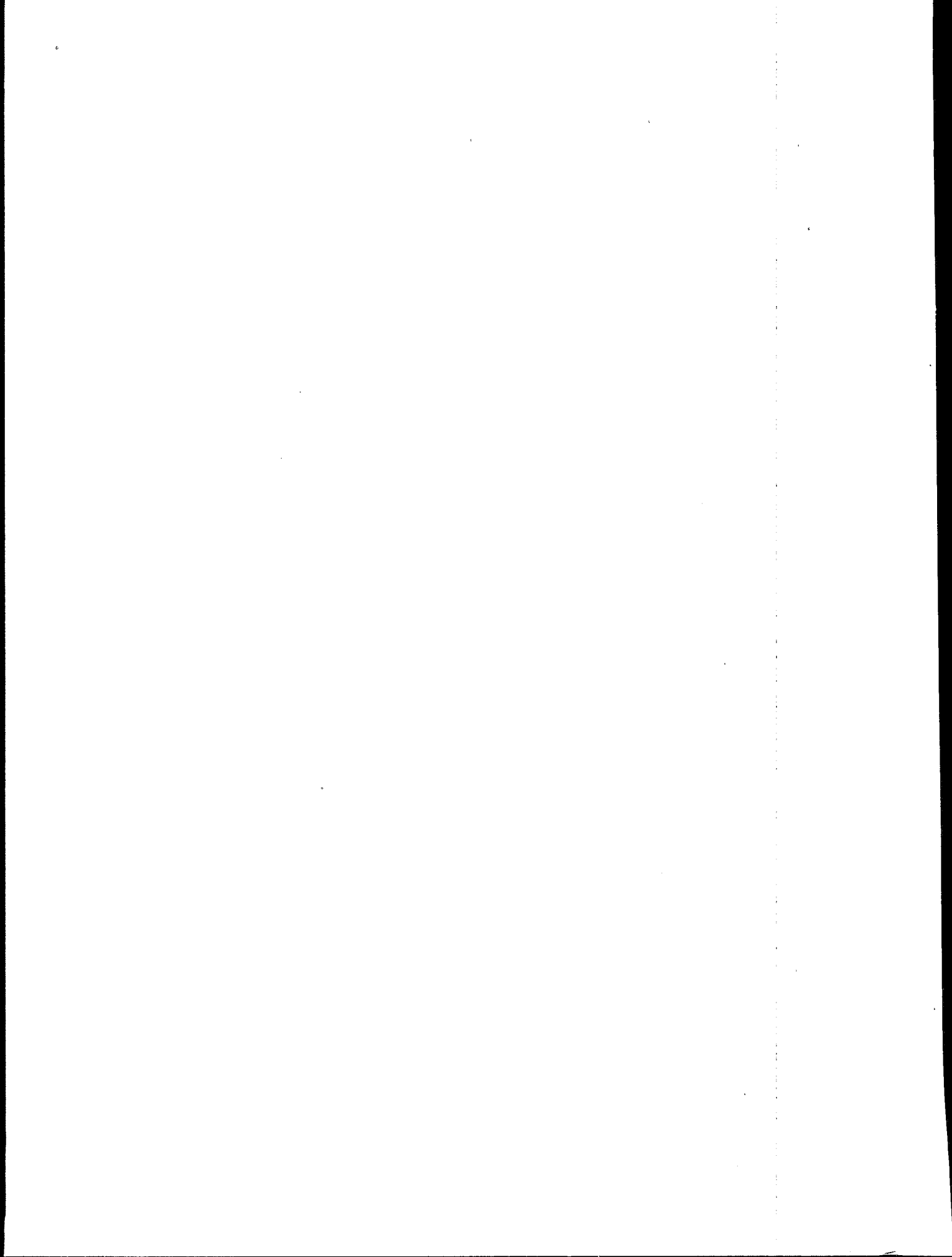
AUDIENCES

- CO-WORKERS
- LOCAL GOVERNMENT OFFICIALS
- COMMUNITY GROUPS
- MEDIA
- YOUTH
- GENERAL PUBLIC



SUCCESSFUL SUPPLEMENTS

- **ANNUAL ADJUSTMENTS**
- **SEPARATE AUTHORITY**
- **MONTHLY BILLING**



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